DOCUMENT RESUME

ED 170 711 CS 004 822

AUTHOR	Shafer, Robert E., Ed.
TITLE	Applied Linguistics and Reading.
INSTITUTION	International Reading Association, Newark, Del.
PUB DATE	79
NOTE	171p.; References may not reproduce well due to small type
AVAILABLE FROM	International Reading Association, 800 Barksdale Road, Newark, Delaware 19711 (Order No. 722, $4.00 member, $6.00 non-member)
EDRS PRICE	MF01/PC07 Plus Postage.
DESCRIPTORS	*Applied Linguistics; Beginning Reading; Bilingual Students; Black Dialects; Child Language; Dialects; Language Development; Miscue Analysis; *Psycholinguistics; Reading Comprehension; Reading Improvement; *Reading Instruction; *Reading Processes; *Sociolinguistics; Spanish Speaking; Teaching Techniques

ABSTRACT

Each of the 12 articles in this book deals with an aspect of linguistics theory and its application to understanding or teaching reading. The topics covered include: defining reading in proper perspective, the relevance of applied linguistics for teachers of reading, why children should want to learn to read, dialects and reading, the features of black dialects that affect reading, a semiforeign language approach to teaching reading to bidialectal children, language acquisition and learning to read, langauge experiences for teachers, miscue analysis with an emphasis on comprehension, language and reading, Spanish reading for Spanish speakers, and one aspect of a British preschool intervention study. (FL)

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Applied Linguistics and Reading

Edited by
Robert E. Shafer
Arizona State University

For the
IRA Linguistics and Reading Subcommittee Two

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Library of Congress Cataloging in Publication Data

Main entry under title:
Applied linguistics and reading.

Bibliography: p.
1. Reading—Addresses, essays, lectures.
2. Children—Language—Addresses, essays, lectures.
3. Language arts—Addresses, essays, lectures.
4. Applied linguistics—Addresses, essays, lectures.
I. Shafer, Robert Eugene, 1925- II. International Reading Association. Linguistics and Reading Subcommittee.
LB1050.A64 372.6 79-16
ISBN 0-87207-722-5

Contents

Foreword *v*
Introduction *vi*

Section One The Reading Process: Linguistic Applications *1*
2 *Defining Reading in Proper Perspective* William S. Palmer
12 *The Relevance of Applied Linguistics for Teachers of Reading* Gordon Wells and Bridie Raban
23 *Why Should the Child Want to Learn to Read?* Arthur Wingfield, E. Hugh Rudorf, and Richard T. Graham

Section Two Applied Sociolinguistics and Reading *39*

40 *Dialects and Reading* Pose Lamb
51 *Black Dialect and Reading: Which Differences Make a Difference?* Jerrie Scott
63 *A Semiforeign Language Approach to Teaching Reading to Bidialectal Children* Mary R. Hoover, Robert L. Politzer, and Shirley Lewis

Section Three Applied Psycholinguistics and Reading *73*

74 *Language Acquisition and Learning to Read* Anne D. Forester and Norma I. Mickelson
89 *Language Experiences for Teachers* JoEllyn Taylor, Vicki Purcell Gates, Barbara Prall, and George Prall
101 *Miscue Analysis: Emphasis on Comprehension* Rudine Sims
112 *Language and Reading* Carol Chomsky
129 *Spanish Reading for Spanish Speakers: A Theory and Classroom Implications* Sarah Hudelson
142 *Matching the Child's Level: One Aspect of a British Preschool Intervention Study* Sara Meadows, Janet Philps, Angela Simkiss, and Asher Cashdan
162 Appendix

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The International Reading Association attempts, through its publications, to provide a forum for a wide spectrum of opinion on reading. This policy permits divergent viewpoints without assuming the endorsement of the Association.

Foreword

While the study of linguistics is not new, its influence on the teaching of reading is relatively recent. An increasing amount of research significant to the learning and teaching of reading is being conducted by linguists throughout the world. Questions related to the reading process, the acquisition of language and its relationship to reading, and the problems associated with language diversity are among those addressed in this growing body of research.

The contribution of psycholinguistics and sociolinguistics has already influenced reading materials and instruction to some extent. Still, there is a great need to bring this knowledge into the reach of classroom teachers, curriculum specialists, and others who are at the school and classroom decision-making levels.

The International Reading Association is indebted to the contributors to this volume for producing a work which adds much to the understanding of linguistic theory and its application to reading instruction. It promises to be an effective resource for those interested in bridging the gap between linguistic theory and practice.

DOROTHY S. STRICKLAND, *President*
International Reading Association
1978-1979

Introduction

The history of the relationship between linguistics and reading is a multifaceted one. Linguists of the "structuralist" school in the 1950s and 1960s were interested in the relationships between linguistics and reading. Donald Lloyd, Charles C. Fries, Carl LeFevre and others examined such problems as the ways in which phoneme-grapheme relationships and other language phenomena affected the reading process. Indeed the development of the initial teaching alphabet by Sir James Pitman may be considered applied linguistics since it could not have been done without the contributions of English phonetics and phonology. The term applied linguistics, although not in common use in the United States, is a helpful one for teachers of reading and reading specialists since it customarily has been used in other countries to mean the application of linguistic science to other disciplines and specifically to the problems of teaching and learning language, including reading and writing. At this writing an American Association for Applied Linguistics is being formed. The fact that there is a Center for Applied Linguistics actively at work to facilitate applications for linguistics to language teaching and learning is not yet known to most teachers other than teachers of English as a Second Language and bilingual education. Despite the early applications of linguistics to reading mentioned above, many teachers of reading have looked upon linguistics as a kind of esoteric subject which employs a strange terminology and has little to say to teachers about how to get the job done. The opinions that many teachers have of linguistics as not having to do with anything important have been promoted by publishers who pressed linguists and others into developing "linguistic readers" which were supposed to be an answer for children from language backgrounds other than standard English who were attempting to learn to read English. The contributions that linguistics can make to education have been obscured by the publication of those textbook series which have had children drawing tree diagrams and such. These so-called "linguistic series" were widely promoted in the schools with exaggerated claims.

During the late 1950s and 1960s the influence of Noam Chomsky's work on the field of linguistics began to be felt. Linguists and psychologists alike began to examine the relationship of language and thought. Chomsky's interest in child language acquisition sparked an active program of research in the study of child language and developmental psycholinguistics. During this period, research in sociolinguistics also developed rapidly as linguists began to explore the various interrelationships between language and society. In the 1960s and 1970s, linguists and reading specialists have increasingly drawn upon sociolinguistics and psycholinguistics for insights into such problems as reading and cognition, reading and dialect, and reading and various types of intervention programs.

Our committee responded to its charge of drawing upon the various disciplines of psycholinguistics, sociolinguistics, and applied linguistics generally to assist us in the determination of how "meaning is acquired from print at all instructional levels." We were determined to find areas where linguistics was making contributions both to an understanding of the reading process and to the improving of reading instruction. In 1975 the Committee began an international survey of people, places, and areas where linguistics was making a contribution to reading. The twelve papers in this collection are the result of that survey. The editor owes a considerable debt to the members of the Linguistics and Reading Committee 1974-1977 for "ferreting out" the authors of this volume. Committee Chair Rose-Marie Weber deserves thanks for her constant support. The editor would like to thank E. Hugh Rudorf, Terry Graham, Rudine Sims, William S. Palmer, and Pose Lamb for assistance with editorial work. Each of the authors deals with an aspect of linguistic theory and its application to understanding reading or teaching reading. Since each author has a different background of experience with linguistics and reading, some papers may appear to be more psychological than psycholinguistic or more linguistic than sociolinguistic. Such judgments should cause little concern given the early state of the science of making linguistic applications to reading. The first three papers deal generally with the ways in which linguistics is redefining the reading process and the reading program itself. The papers by Palmer, Wells, and Raban are written from the teacher's point of view, whereas the paper by Wingfield, Rudorf, and Graham is, interestingly enough, written from the child's point of view.

In the section on Applied Sociolinguistics and Reading, Lamb and Scott survey the recent research in the area of dialect and reading, with implications for ways of working with children who come to school speaking Black English or other varieties of English. Hoover, Politzer, and Lewis suggest what they call a "semiforeign language approach" to teaching reading to bidialectal children. This approach emphasizes the establishment of sound-symbol relations and the creation of word-analysis skills.

The paper by Mickelson and Forester deals specifically with the implications of recent research in child language and developmental psycholinguistics for reading acquisition, with some specific implications for the teacher and the organization of the classroom to provide "for an easy transition from spoken to written language." The paper by Taylor, et al. deals with the implications of psycholinguistic knowledge for the selection of reading materials and for activities in which children can engage to facilitate reading acquisition as a result of the processes of language acquisition. Sims reviews the topic of miscue analysis as an outgrowth of psycholinguistic knowledge, pointing to specific suggestions for teachers as to how a knowledge of miscue analysis can help them develop reading strategies to assist readers to build on their own strengths. Chomsky's article describes her studies of the child's ability to organize linguistic material and to develop and test hypotheses to deduce the way language works, specifically with the ways a child determines the relationships between spelling and the pronounced form of words. Hudelson's paper describes her study of the oral reading behavior of native Spanish speakers using their language resources to read successfully in Spanish. The paper by Meadows, et al. describes the ways in which the development of a dialogue with children in nursery school situations can be used as a standardized way of observing and assessing language competence and cognitive development.

A unifying thread running through the accounts from all three countries represented in this collection is the way in which researchers in the various areas of applied linguistics are joining hands with teachers to explore the relationships between reading and children's language uses and functions in and out of classrooms at all levels, so that a greater understanding of the similarities between the "languaging" and reading processes may be brought about. It is in the spirit of this joining of hands that our Committee offers this volume.

ROBERT E. SHAFER

SECTION ONE

The Reading Process: Linguistic Applications

Defining Reading in Proper Perspective

William S. Palmer
University of North Carolina at Chapel Hill

A basic question concerning reading is its definition, for many teachers base their understanding and philosophy of teaching reading upon descriptions of this complex process. There is, however, no single generally accepted definition of reading. After many years of studying and analyzing information assumed to be associated with reading, researchers still do not have any one definition that explains decisively the reading process. Many definitions, nevertheless, tend to focus around one of two inadequate explanations of reading.

Nonspecific Definitions

Frequently, reading is explained in vague, global, and oversimplified statements, such as "cracking the code," or "decoding print," or "getting meaning from print." Indeed, these shallow and nonspecific statements are insufficient for explaining an activity as complex as reading.

Skills-Oriented Definitions of Reading

On the other hand, for those educators seeking more specific clarification of reading, the process often has been defined in relation to a series of diverse skills, subskills, and descriptive explanations of the relationships of these skills to one another. Many dominating definitions of reading attempt to clarify the reading process by arranging these skills, principally the cognitive kind, in hierarchies. Hierarchies of reading skills attempt to explain how one skill builds upon the preceding one through a structural arrangement. Because hierarchies provide systematic organization of skills into main and subcategories, they are presumed to increase the understanding of the phenomena under investigation.

In other words, a hierarchical structure of reading skills presumes that each skill builds from those below it and that the higher the skill is listed in the hierarchy, the more difficult it is to comprehend. Reading proficiency, then, is assumed to increase as the reader moves in his reading from one skill to the next. Thus, for many years, various components that comprise reading have been arranged in hierarchical order. Hence, many definitions of reading have resulted that are, for the most part, skills-oriented. Typically, the acquisition and use of reading skills in hierarchical order are explained through models of reading known as taxonomies.

HIERARCHICAL COMPONENTS WITHIN
SOME TAXONOMIC DEFINITIONS OF READING

Olive S. Niles	*David H. Russell*	*Emerald V. Dechant*	*A. Sterl Artley*	*William S. Gray*
1. Word recognition	1. "Barking at words"	1. Word recognition	1. Word Perception, form, meaning	1. Word Perception, pronunciation, meaning
2. Association of meaning with printed symbols	2. Literal comprehension	2. Understanding	2. Comprehension of stated or implied meaning	2. Comprehension
3. Literal comprehension	3. Interpretation	3. Reaction	3. Critical and emotional response	3. Reaction and evaluation
4. Interpretation	4. "Shock of reaction"	4. Integration	4. Application of perceived ideas to behavior	4. Assimilation
5. Evaluation				
6. Assimilation				

In their attempts to define reading, certain educators share many similarities and some differences among their hierarchical components. In the illustration of hierarchical components that go to work in the reading process, Niles (*11*) and Dechant (*12*) view the first stage of reading as involving word recognition, what Russell

(*13*) calls "barking at words." In her definition, Niles lists the association of meaning with printed symbols as a second level. In contrast, Artley (*1*) and Gray (*7*) call their first step "word perception" and, as such, directly associate form, pronunciation, and meaning with word recognition

All five of these reading educators refer to reading comprehension in their definitions. Niles and Russell, however, delineate various levels of reading comprehension, first the literal and then the interpretive. Artley lists these two levels together as stated or implied meaning, but Artley also adds another level of comprehension—critical and emotional response. To the others, critical reading involves reaction to and evaluation of what is read. Artley, however, gives consideration to the attitudes, interests, and feelings of the reader by including emotional response as part of the reading comprehension process.

Niles and Gray list assimilation of what is read as their final levels—what Dechant refers to as integration. Both Russell and Artley extend their final levels to include assimilation and more. To Artley, readers not only assimilate what is read but apply the ideas perceived through print to their behaviors. Russell refers to his fourth and last level as "the shock of recognition" and, like Artley, considers the emotions of the reader. He suggests that at the apex of reading taxonomy, readers involve parts of their emotions and personalities of which they may not be fully aware. Russell sees in print the potential for thoughtful analysis and critical review, but he also notes that print has the power to provoke more stirring experiences. The "shock of recognition" occurs when readers recognize a new or an important idea in whatever is being described in print, whether it be actions, characters, or values. The impact of shock is such that readers are changed, somewhat, by recognizing fresh insights into their own lives or the lives of others (*13*).

Advantages of Reading Taxonomies

Defining the reading process through taxonomies serves the following purposes:

1. Taxonomies are descriptive tools which delineate some of the complexities of thought involved in reading.
2. They clarify for the teacher that reading comprehension involves various stages of cognition or various levels of thought.

3. They suggest, or at least the more inclusive reading taxonomies suggest, that the apex of the hierarchy involves the interaction of thought and feeling.

Limitations of Taxonomic Definitions of Reading

The following limitations, however, are characteristic of most reading taxonomies:

1. *The orderly presentation of categories may suggest a greater precision than the classification system really possesses.* Clymer (*2*) implies that levels of comprehension typically listed in reading taxonomies may not follow a logical progression. The arrangement of comprehension skills in hierarchies, then, does not necessarily mean that the tasks of a higher order are always more difficult than those of a lower order or that all students will make use of these skills in similar progression. The difficulty of the task will be determined by each student, the use he makes of the information available, and whether the reading task or tasks require a response in a certain sequence or ordering of events. A lockstep progression through levels listed in reading taxonomies is typically uncharacteristic of actual reading experiences when spontaneous and simultaneous factors often affect readers differently at various times, depending, in part, upon students' purposes for reading and the conditions under which they read. Johnson and Pearson (*9*) contend that the whole notion of a sequence or hierarchy of reading skills is, at best, a "pedagogical convenience." These researchers believe that, although the idea may appeal to the teacher's sense of logic, "... there is precious little evidence to support the existence of separate skills, let alone separate skills which can be placed into a sequence of hierarchy."
2. *Little attention in reading taxonomies is given to affective factors in reading—interests, attitudes, feelings, and emotions.* At times, affective influences in reading are difficult to separate from the reading comprehension process because of the delicate and interwoven relationships between thinking and feeling.
3. *Taxonomies of reading comprehension skills frequently fail to make the distinctions between how something is comprehended and what is comprehended.* Simons (*15*) claims that

taxonomies in reading do not clearly delineate the domain of behavior and cognitive activity which can be characterized as reading comprehension. Thus, reading comprehension skills listed in reading taxonomies tend to be global and ill-defined, failing to distinguish between those processes that are specific to reading and those that characterize general mental abilities.

To illustrate, Moffett (*10*) believes that many mental activities that occur in different areas of human experience have been relegated primarily to reading. For example, some thought processes associated principally with reading are recalling, comprehending, and interpreting—mental activities that involve summarizing, selecting facts, finding the main idea, verifying ideas, predicting, arranging ideas in sequence, reacting, synthesizing, and interpreting. These activities are often experienced during or after interaction with print, but they frequently occur before reading and during other learning situations as well, such as oral discourse or film viewing. When such mental activities occur in these latter examples, they are clearly removed from the realm of reading. Teachers must ask themselves crucial questions: Are these learning experiences purely "reading skills" or can the experiences be applied to other disciplines as well? Are they thought processes related to reading but not restricted to this field? In other words, are they skills not specific to reading? If there are certain other comprehension skills specific just to reading, what are they?

Most reading authorities understand that thought processess occur in areas other than reading. Basically, these educators concern themselves with activities that relate to reading. Thus, they call these mental operations "reading skills." As Moffett notes, categorizing these mental functionings as reading skills has caused enormous confusion in education and has resulted in negative effects throughout the curriculum. Until educators clarify which comprehension skills are specific to reading and which are involved in all thought-provoking activities, confusion will continue.

If these distinctions are not understood by teachers, then one confusion that frequently results concerns the question of transferring global thinking skills to usage within the various content areas. If content teachers assume that general thinking skills are really reading skills reserved for special classes and teachers, then the development of critical thinking may be left for students to discover by mere chance. Unfortunately, a large number of students do not accomplish this transfer. When such thought processes are restricted just to reading, there is always the danger they may never be seen as influencing all of learning. Moreover, when teachers ignore how a reader selects key graphic cues (such as those obtained through scanning, fixations, and regressions) the teachers may be overlooking skills specific to reading comprehension.

4. *The various steps in the reading process listed at different levels in reading taxonomies frequently lend themselves to misinterpretation in practice.* Taxonomies of reading do not clearly differentiate between *what* is comprehended and *how* it is comprehended.

One Procedure for Teaching Reading: The Skills Approach

Typically, taxonomic definitions of reading have included elements similar to those found in most reading achievement tests. In many cases, the items tested within standardized tests have become the foundation for much instruction in reading. Thus, at times, taxonomic definitions of reading not only influence the teacher's perception of reading but also the way this key language arts activity should be taught. As a result, the most common method of teaching reading, especially in the high school, has become known as the skills approach.

Numerous researchers and educators interested in reading have promoted this approach by conceiving reading achievement as the acquisition of specific reading skills. The student who is a poor reader is often assessed in terms of missing reading skills. Sawyer (*14*) keenly pinpoints the underlying assumption behind the skills approach when she says that if teachers can identify and define the reading skills students have or have not mastered, then students can be taught to overcome deficiencies in reading. Sawyer further observes that for some students success may follow, but she also warns that improvement in reading has not always been the norm, particularly for students who are low in reading ability. She concludes that all too often the only difference in reading skills instruction from one grade to the next is the teacher or the reading materials. Under these learning conditions, high school students who are experiencing difficulty with reading may change little as they progress in their schooling—except, perhaps, to fall further behind in their abilities to interact with print.

Another problem in teaching reading by the skills approach alone concerns the types of teaching strategies taxonomic definitions and models of reading have suggested to teachers for enhancing instruction. Far too frequently, taxonomies have been interpreted as an organized structure and set of goals for improving reading instruction. The inadequacy is not necessarily due to the limited vision and understanding on the part of taxonomic model builders. Rather, the failure frequently results from misinterpretations of the instrument by teachers who adopt a rigidly sequenced, lockstep approach to reading consistent with each step of the hierarchy. Students are told to read snippets of this and snippets of that and then to answer specific kinds of vocabulary and comprehension questions. Often students complete a variety of exercises, some that they may need and others that they may not need. Such heavily prescribed, set instruction tends to remove students to the periphery of more meaningful reading experiences.

A common use of the skills approach, for example, involves the isolation of specific thought processes, either by the teacher within teacher-prepared materials or by publishing companies within texts and prepackaged materials. Next, these skills are applied to particular passages of print, usually one-by-one in piecemeal fashion; and the teacher focuses on one or more short term goals. As a result, students build block-upon-block of factual knowledge, generally through drills, rules, memorization, and classification. Thus, this kind of reading instruction deals with fragments of the total process. *Within this framework*, the skills approach defeats the ultimate goal of reading instruction—to produce self-realized, critical readers.

To illustrate, a number of secondary school teachers interested in improving reading in the various subject matter areas have become busy building study guides at three different levels of reading comprehension: the literal, the interpretive, and the applied. Students use these guides to find out what the author said, what he meant, and how to use the author's ideas (8). If these guides are not used judiciously, however, students will gain knowledge about books, rather than the capacity to read and respond to them. Two questions must be asked: Do these study guides enable students to gain more from their reading? If so, how?

Psychological Processes in Reading: Toward a Psycholinguistic Definition

As long ago as 1949, Gates explained the need to link the various components concerned with thought to numerous kinds of reasoning. He also urged educators to search for the best methods to ensure the development of different levels and kinds of thought. Gates (*4*) says:

> Reading is not a simple mechanical skill; nor is it a narrow scholastic tool. Properly cultivated, it is essentially a thought process. However, to say that reading is a "thought-getting" process is to give it too restricted a description. It should be developed as a complex organization of patterns and of higher mental processes. It can and should embrace all types of thinking, evaluating, judging, imagining, reasoning, and problem-solving. Indeed, it is believed that reading is one of the best media for cultivating many techniques of thinking and imagining.

In his definition, Gates defines reading as a process much more clearly than do most taxonomic models. He states that reading comprehension should not only be developed as a complex organization of patterns of higher mental processes but that levels of comprehension should also involve all types of thinking—"evaluating, judging imagining, reasoning, and problem solving." Moreover, Gates considers both the cognitive and affective domains in learning to read by stating that he believes reading to be "one of the best media for cultivating many techniques of thinking and imagining." This definition of reading, however, misses an important element that today extends the understanding of reading as a process. The missing element is *language*.

Through recent research in reading, one now knows that this mental activity is not only a thought process but also a language process. However, Gates' definition of reading, like taxonomic models, fails to deal with how language is structured, within different modes of discourse. Thus, these early definitions fail to suggest how words and syntactic structures come to be associated with comprehension and how the reader, in turn, processes information from print to meaning. Such recent insights have come primarily, from the fields of psychology and linguistics.

Although it is still not known exactly what constitutes the reading process, recent developments in psycholinguistics indicate that information-processing models that are theory based offer the promise of a clearer and more precise understanding of this complex activity. One psycholinguistic definition that combines both language and thought has been penned by Goodman (*5*) who defines reading as "... a complex process by which a reader reconstructs, to some degree, a message encoded by a writer in graphic language." Both Goodman (*6*) and Smith (*16*) theorize that a reader reconstructs a message by making use of both visual and nonvisual information.

Nonvisual information transcends the text or printed material being studied. First, nonvisual information involves student ability to conceptualize and the extent of previous experience in reading, particularly in relation to topics of the material at hand. Second, nonvisual information involves student knowledge of language and familiarity with the structure and patterns within forms of written discourse. Visual information, on the other hand, involves similar yet other complex strategies of information-processing. The redundancies within printed language greatly influence the students' tasks of correctly making decoding responses. Redundancy in print occurs at a number of levels. There is featural redundancy in individual letters. For example, some letters are curved while others are straight. The same kind of featural redundancy occurs in words. There is also much redundancy within the structure of words because in the English language patterns of features tend to occur only in certain combinations. These highly consistent patterns of features are examples of *orthographic redundancy*. Redundancy also extends across sequences of words and involves syntactic and semantic constraints. Reading thus becomes perceived as an activity done to reduce uncertainty in print (*12*).

To reduce uncertainty and obtain meaning, readers do not need to make use of all the information available to them. Instead, they use the most direct route and as few cues as necessary to reach their goal—comprehension. An understanding of language structures and the fact that every bit of information may be conveyed by several cues make it possible for readers to predict and analyze the printed grammatical patterns on the basis of identifying a few elements within. The context in which the language occurs, created by the previous meanings readers have gathered, allows them to predict meanings that follow. To comprehend during reading, then, students predict as they read, selecting only the most productive cues and sampling the graphic language as they test their predictions. When predictions are not confirmed, readers then engage in greater visual analysis.

The implications of psycholinguistic theories and definitions of reading thus become apparent. (They are explored at length in other chapters in this volume.) Instead of becoming passive identifiers of letters and words, students become active searchers for meaning during reading. Teachers, in turn, help to expedite this process. Instead of perpetuating instruction in reading with a set of discrete and fragmented skills, teachers help students go directly from graphic language to meaning without getting bogged down needlessly in the process.

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The Relevance of Applied Linguistics for Teachers of Reading

Gordon Wells
University of Bristol

Bridie Raban
Bristol Reading Centre

The ability to read and write one's native language is one of the prime aims of education, and teachers rightly look for all the help they can find to enable them to help each child succeed. In recent years, as emphasis has refocused on the essentially linguistic basis of reading and writing, increased attention has been paid to theoretical work in linguistics and the related disciplines of psycholinguistics and sociolinguistics and a number of books have appeared on linguistics and reading which offer a theoretical perspective on the teaching of reading and writing drawn from these disciplines.

While not wishing to cast doubt for teachers of reading on the value of serious study of language, this paper attempts to treat the relevance of such study as problematic and to investigate ways in which the theories about language as developed by linguists, psycholinguists, and sociolinguists are actually helpful in teaching children to read. Since both authors are involved in the education of teachers, a natural line of investigation was that of talking with teachers of reading who were engaged in full- or part-time study, whose courses included various aspects of applied linguistics, in an attempt to discover what these teachers had gained from their studies. Conducting an observational study of children learning to read provided another perspective on the question. The second part of this paper considers the extent to which linguistic theory assists in the interpretation of the data collected.

All of the teachers contacted had been engaged in study for postexperience higher awards in the School of Education at the University of Bristol. The writers first asked the teachers how their gained knowledge of linguistics and related subjects had affected their teaching of reading. In every case the answer was positive, and teachers mentioned a number of specific teaching changes they had made as a result of their studies. One teacher, a deputy head of a junior school (age range seven to eleven years), explained how her study had brought about a shift in emphasis from decoding words sequentially to utilizing central skills of reading, even when students are novices. This teacher says that she now "encourages children, on meeting an unknown word, to read on to the end of the phrase of sentence and guess the missing word from the context."

A remedial teacher working with children, ages eight to thirteen years, stressed a completely new approach to hearing children read. In the past, he said he "had seen this activity as providing children with an opportunity for practicing their skills," and he now considers it to have a very important diagnostic function in allowing him to identify the strategies the children are using. He, like most of the other teachers consulted, is making use of a modified version of the miscue inventory of Goodman and Burke (*5*) to analyze errors in reading aloud, in order to gain greater understanding of each child's strengths and weaknesses.

A teacher of children five to seven years-of-age described how she had been led to a much more careful consideration of the similarities and differences between spoken and written language. This realization had helped her to see more clearly how to use a language experience approach, building on the children's existing expertise in oral language. She had also become more aware of the ways in which differences between spoken and written language might cause problems, for example, the different purposes for which the two media are typically used and the apparent dissimilarity between the continuous flow of speech and the way in which a written message is broken up into units with spaces in between.

Helping children grasp the connection between the language they confidently use when talking and listening and the initially strange visual array presented by a written or printed text is central to a language experience approach, and some children need considerable assistance in making this connection. Clay (*4*) makes the following point:

> A child may have developed good visual perception for forms and

shapes and yet fail to learn to read because he thinks the task depends on visual memory for particular letters or forms and does not appreciate that his power to produce language has anything to do with it. Similarly a child with good language skills may be unsuccessful in applying these to reading because he does not pay the visual cues sufficient attention.

From these and other comments, there was no doubt that this group of teachers had gained much of practical significance from their studies. From their answers, the following general picture emerged concerning what they now see to be the main considerations in helping children learn to read:

1. *Getting meaning from print.*
   a) Emphasis, first and foremost, on making sense of written language; using expectations derived from the text, both preciding and following, as well as from personal experience, to overcome the barriers presented by unknown or difficult words.
   b) Importance of maintaining an appropriate balance between predicting and decoding skills.
   c) Using children's errors when reading aloud to diagnose problems.
2. *Relationship between spoken and written language.*
   a) Preference for working from larger units to smaller units when teaching analysis of both spoken and written language—making comparisons between whole messages first, then words and morphemes, before teaching relationships between phonemes or phoneme clusters and graphemes and grapheme clusters.
   b) Awareness of the importance of using written material that draws upon the sort of spoken language that children are familiar with—at least in the early stages.
   c) Recognition that a written text can be read aloud just as easily in any accent and that speakers of nonstandard dialects need not be handicapped if different forms are recognized as equivalent in meaning.
3. *Purposes for reading and writing.*
   a) Emphasis on finding genuine purposes for reading and writing, and on developing appropriate strategies for different purposes.
   b) Initial emphasis on enjoyment of reading—listening to stories being read aloud.

Perhaps the most important emphasis these teachers shared was that of helping children build and maintain *meaning momentum*. They now agree that training in specific letter identification and letter and sound matching skills, important though these are, must be subordinated to the larger aim of encouraging children to acquire a wide range of useful strategies for discovering a writer's message.

On the basis of the teachers' answers, the relevance of linguistic studies might seem to have been established beyond doubt. However, when asked which particular aspects of linguistics they had found most helpful, these teachers were less certain. Clearly, it was not the specific content of any particular grammatical description such as is presented, for example, in various transformational-generative grammars of English. Nor were the basic principles of the theory—notions of generative and transformational rules or the distinction between competence and performance—felt to be particularly relevant. Even in the associated disciplines of psycholinguistics and sociolinguistics, the teachers found it quite difficult to pick out writers or researchers whose work was immediately relevant. In fact, what these teachers had absorbed during the course of their studies, was not so much applicable theories as a deepened interest in language as a human phenomenon and a greater willingness to stand back and consider afresh what it means to communicate through language. As a result, they had arrived at new insights about how children can be helped to acquire skill, confidence, and satisfaction through use and development of their communicative abilities.

One group member described linguistics as "the study of language in a *communication* context, where a great deal of attention is paid to intended and expressed *meanings*, and not just to what appears on the surface." This is a description of what, from his point of view, this teacher felt linguistic studies ought to be about. Indeed, when one looks at the contributions that eminent linguists have made to the debate on reading during the past twenty years, the topics with which they seemed least concerned were communication and meaning.

In interpreting the teachers' replies, the writers do not wish to denigrate the proper concerns of linguists nor to suggest that the teachers failed to understand the significance of linguistic studies; instead they suggest some doubts about the current vogue for the wholesale incorporation of linguistic theory into the different domain of planning curriculum activities and carrying out those plans—even when the curriculum activities are linguistic. The concerns of linguists and teachers are different, and this difference will be reflected in the way in which they think about language and language behavior. Real children do not conform to idealized models constructed by the theorists, nor are the problems children encounter, and with which teachers have to deal, necessarily those to which the linguists have given attention.

This factor is probably nowhere more true than in the very early stages of learning to read, the subject of the preceding observational research. The twenty children studied were selected from a much larger sample whose preschool language development has been monitored since 1973 in a longitudinal study being carried out at the University of Bristol.* One of the aims of the study is to investigate the ways in which children draw upon the skills they already have as native speakers and listeners when they start to learn to use the written form of language.

The implication of much recent psycholinguistic research on reading is that the main difference between reading and listening lies in the different sensory modalities employed and that what the beginning reader chiefly has to learn, therefore, is the correspondence between the two systems of representation. Hence the emphasis on reading for meaning, since it is assumed that, by concentrating on the level at which spoken and written messages are most similar, strategies developed for coping with spoken messages will help beginning readers to use cues that are already available to them and allow them to gain the meaning momentum which is essential for effective reading at any level.

Although the writers agree with theorists who emphasize the general similarity between reading and listening, they nevertheless are aware of important differences between the two activities by which require many young children who have mastered spoken language to spend quite a period of time being initiated into the activity of reading. Learning of phoneme-grapheme correspondences and the spatial conventions of writing are important; but the authors believe that, for initial progress, it is more fundamental to understand the purposes of reading and writing and be aware of the fact that messages can be sent and received through solitary and silent interaction with marks on paper, as well as through face-to-face speech encounters with other people. Children also vary considerably in their initial motivation for the task of learning to read, as a result of their preschool experiences at home; there are, in addition, large differences in the circumstances of their first encounters with the printed word either at home or in the more formal context of the classroom. All these factors seem likely to have an influence on the success with which children change from being nonreaders to being able to read with confidence and fluency, and the aim of the research is to attempt to gain a better understanding of the complex processes involved.

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*This research is supported by the Social Science Research Council of the United Kingdom under Grants HR 2024/1 and HR 3797/1.

One way of achieving this aim is by observing the progress of individual children, as the writers have been doing, through regular visits to the schools of the twenty children involved. In addition to administering appropriate tests of reading attainment at the beginning and end of the school year, written and video records of the moment-by-moment activities of these children were made one morning monthly.

The teachers of all these children are using a language experience approach and as far as possible attempt to arrange individual or small group activities appropriate to the needs of the children. One of the things that quickly emerged from the observations was how little teachers know about how children perceive the tasks traditionally set for them at this stage. Consider the following examples:

> Paul (age 5) has just started school. He has drawn a picture of himself riding his bicycle in the park, and his teacher has written a caption to his dictation. He sits at his table, copying under the teacher's writing, working more or less systematically from bottom right to top left in forming both words and letters. When he runs out of space, he fits the remaining words in wherever there is a space in his drawing.
>
> Wendy (5 years, 4 months) and a friend have been given a reading game to play, in which they are required to match words and pictures. Having explained the game to them, their teacher leaves them to play by themselves; but after a few rather unsuccessful attempts, the two girls find an alternative use for the cards as they play shop, with the cards as money.
>
> Philip (5 years, 3 months) is invited to read to his teacher from Bruna's *I Can Read*. As can be seen from the transcript of this session, Philip knows enough about what reading involves to justify his version by pointing, correctly, to specific letters. But at a more fundamental level he has almost no idea at all about how these letters convey the precise meaning of the text

Text	*Philip*	*Teacher*
This is my nose	Girl It's got an *e* on the front (points to the *e* in *nose*)	Why do you say *girl*?
and this is my mouth	Girl 'Cos it's got a *d* on the end (points to *d* in *and*)	How do you know it's *girl*?
This is my front	Girl	
and this is my back	Girl 'Cos it's got that on the end a 'd' (points to 'd' in 'and')	Is it?

The problems illustrated by Philip, Wendy, and Paul are not caused by culturally irrelevant material nor by lack of ability in the spoken language; nor are they likely to be overcome by emphasizing the use of the context cues or by careful training with a structured programme of phonics, useful though both of these approaches will be at a later stage. Before the children can begin to make real progress in reading, they will somehow have to discover for themselves that written language can have meaning for *them* and that this meaning is systematically related to the particular visual array of marks on the page, in a very similar way to that in which they understand the meaning of what is said to them from the particular sequence of sounds that is spoken.

Fortunately, however, most children do make this discovery and, as observations from the end of the first year at school show, they develop their own strategies for dealing with the systematic relationship of meaning to print.

Wendy, for example, at 6 years, has learned to write her own simple stories and has developed for herself the helpful strategy of taking her writing on the run. Whenever she stops writing to talk to her friends—something which occurs after almost every word—she forgets where she is in composing her sentence. Each time this happens, she goes back to the beginning of the sentence and reads and matches each word until she reaches the point where she broke off, and in this way she regains the momentum to continue with her writing.

James (5 years, 9 months) is another child who has made the breakthrough during the year. Reading aloud to his teacher, he breaks off to talk about the words:

James: (reads) As they walk up the hill they see a fireman they . . . know-
(comments) I keep getting it wrong because it's got a *k* on the end
Teacher: Yes it's difficult, isn't it?
James: And it—without the *k*—it says *now* and without that and that (pointing to *k* and *w*), it says *no* . . . difficult!
Teacher: Yes, I know. But you know it. You got it right, didn't you?

This short episode is interesting in showing the awareness that James has of the structure of written language and of the way in which differences in meaning are related to specific arrangements of letters. However, the question still needing an answer concerns how children like Wendy and James make their individual discoveries. When educators understand this process, they can begin to plan for it to happen, rather than simply wait and hope.

Some suggestions can be gleaned from linguistic research but not conclusive answers. For example, research on language acquisition in recent years has begun to emphasize the importance of the situationally relevant utterances that are addressed to young children by parents and other adults in providing an opportunity for children to discover the relationship between the functions and meanings that are intended and the actual selection and arrangement of linguistic elements in these spoken utterances. It can be assumed, therefore, that similar presentations of relevant written messages will be helpful for the discovery of the relationship between meaning and written language. But the parallel is not complete, as the need to acquire control of spoken language is far more compelling than the need felt by many children to acquire an additional medium of communication, even when they have realized that writing does indeed have a communicative function.

Ensuring similarity between written language children encounter in school and spoken language they use both in and out of school has also been suggested as theoretically likely to help them see the connection—central, of course, to the language experience approach. Practices, such as writing down the stories that children tell so they are able to read texts of their own composition, provide opportunities for making the connection; but the opportunities are not always grasped.

Playing with the forms of spoken language through puns, nonsense rhymes, and so on has also been suggested as a help in learning to read since grasping the rather abstract connection between meaning, speech, and the spatial arrangement of words and letters in writing requires the learner to treat "language forms as opaque and attend to them in and for themselves" (2). Certainly, pleasure and interest in manipulating language forms have been associated with success in the case of James, whose comments on the spelling of *know* were quoted earlier.

But how do these theoretical suggestions help to explain the relative lack of progress made by Philip who, at the end of the first year, is still only at the stage of talking about the pictures in his books. Philip comes from a well-educated family where there is ample evidence of the importance of reading. His parents frequently read stories to him and take him on visits to museums, activities Philip enjoys very much. At school he has many friends and is a successful conversationalist. He also has a clear grasp of the social importance of being able to read. Challenged on one occasion by another child who disbelieved his claim to be able to read, Philip picked up a book that neither he nor the other child was able to read and gave a convincing performance of "reading" the story aloud. Nevertheless, he has not yet discovered the actual relationship between language and print.

From one point of view, these particular children, along with many others, can be seen as providing evidence for or against particular theories—a perfectly proper point of view for the linguist or psycholinguist. From another point of view, however, the children illustrate the sort of everyday experience that teachers have to understand as best they can in order to plan their classroom programs. What should be the relationship between these points of view? Should teachers see their role as that of assimilating the theories provided by the linguists, psychologists, and other researchers in order to apply these theories in their teaching? Or is there some other, less dependent, way of conceiving the relationship? The writers believe that there is and that it has already been indicated by the teachers whose views are quoted. The teachers wisely had not attempted directly to absorb and apply the linguistic theory they had met in their courses, for they had not found it to be particularly relevant. Instead, they started to construct their own theories of reading and learning to read, and some of their ideas were suggested to them by the study of language in which they had engaged. However, it was noticeable that the researchers whose work they had found particularly helpful were such writers as Kenneth and Yetta Goodman, Frank Smith, and Courtney Cazden, whom the teachers perceived to be less linguists or psycholinguists than educators with aims similar to their own.

The teachers' conclusions seem to be entirely appropriate. In the first place, linguistic theory has not concerned itself with all of the problems about which teachers have to make decisions, nor is there agreement amongst linguists on quite fundamental issues, such as the importance of teaching phoneme-grapheme correspondences and the form that such teaching should take. Chomsky (*3*: 196) said, "I am frankly rather skeptical about the significance, for the teaching of languages, of such insights as have been attained in linguistics and psychology.... It is difficult to believe that either linguistics or psychology has achieved a level of theoretical understanding that might enable it to support a 'technology' of language teaching." More recently, Cazden (*2*) suggested similar reservations.

Second, and more important, the aims of linguists and teachers are essentially different. Linguistics is a descriptive science, whereas, in the positive sense of the term, teaching is a prescriptive art. This is not to suggest that linguists take no interest in the applications of the theories they construct on the basis of empirical observations, nor that teachers will not make more effective decisions as a result of acquiring an understanding of the linguists' theories. As Cazden suggests, if the theoretical knowledge is to be helpful, it must be carefully selected and restructured into an action-oriented programme—which is to suggest that teachers should be theory-constructors too, but constructors of theories that relate directly to their classroom practice.

An analogy may help to clarify the distinction. There is a respectable branch of acoustical research which describes and accounts for the characteristic sounds produced by instruments of the orchestra. It seems reasonable to assume that knowledge derived from such study would be interesting, and perhaps even helpful, to aspiring composers. But if musicians are to achieve the symphonic effects they have in mind, one should hardly advise them to treat composition as the application of this branch of acoustical physics. Rather, one should advise them to look to the theory of orchestration for assistance and, in time, one might expect successful composers to contribute to this theory through their own unique creative abilities. In the course of this endeavor, they may make use of information derived from acoustical physics, but only insofar as it helps them to achieve the musical effects toward which they strive.

Of course, the analogy must not be pressed too far. Nevertheless, the writers' contention is that teachers are more akin to composers than to research physicists and that the sort of theories they will find most helpful are those which are developed and refined in relation to their own creative experiences of working with children.

The relevance of linguistic theory, therefore, is a matter for the individual teacher to decide. In attempting to construct useful theoretical frameworks to guide the decisions teachers must make in planning appropriate learning experiences for the different children in their classes, teachers will want to build bridges toward a wide variety of information and explanation, including the linguistic sciences. Teachers will also want to test the value of ideas they bring back against practical criteria: Do these ideas help me to teach more effectively and to understand why some courses of action are more successful than others? Only where these criteria are met, will the ideas justify the carriage.

Chomsky (*3*) urges teachers to decide for themselves on the relevance of linguistics to the teaching of reading:

> Teachers have a responsibility to make sure that ideas and proposals are evaluated on their merits, and not passively accepted on grounds of authority, real or presumed. The field of language teaching is no exception. It is possible—even likely—that principles of psychology and linguistics, and research in these disciplines, may supply insights useful to the language teacher. But this must be demonstrated, and cannot be presumed. It is the language teacher himself who must validate or refute any specific proposal. There is very little in psychology or linguistics that he can accept on faith.

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Why Should the Child Want to Learn to Read?

Arthur Wingfield
Brandeis University

E. Hugh Rudorf
Richmond College, CUNY

Richard T. Graham
Virginia Polytechnic Institute

Of all the subjects in the elementary school curriculum, reading probably persists as the number one priority. Not only does society consider literacy of prime importance in gaining any sort of social or economic success, but the school system itself considers reading absolutely essential to progress through the grades and into higher education.

It is likely that more money has been spent in reading research than on any other area of the curriculum and that more innovative programs exist for the field of reading than for any other subject matter area in the curriculum. If the present rate of proliferation of reading programs continues, beginning reading programs will soon (if they do not already) outnumber the total number of instructional approaches in all other curriculum areas combined. We probably already have enough brands of reading instruction on the market for each child in a given first grade class to have his own private brand.

Yet, in spite of this massive effort on the part of educators and educational researchers, failure in reading continues to plague school systems. Could such reading failures, in fact, be *caused* by the very programs of reading instruction which continue to proliferate? Could reading be the last of the curriculum areas to be subjected to rigorous academic, theoretically sound, investigation? Could the great bulk of reading research of the past century or more have failed to produce satisfactory results because it was based upon naive acceptance of myths about the reading process itself? Could reading research have failed to ask the right questions?

"First Grade Studies," the result of a massive government effort to investigate reading pedagogy, managed to produce the startling conclusion that "the teacher makes the difference." In the extreme, it might follow that if it is indeed the teacher who makes the difference in producing success in reading achievement, it is also the teacher who makes the difference in producing failure in reading achievement. To the degree that the teacher makes the difference, it might also follow that pedagogy, programs of instruction, all of the varieties of packaged materials which continue to bombard the education scene, do *not* make the difference.

Before reacting too strongly to observations such as these (whether with agreement or with outrage), one should first recognize in all fairness that reading research and instruction have lacked to a surprising degree a sound theoretical base on which to build. The new math programs have benefited from the input of the discipline of mathematics through bona fide mathematical scholars; the new science programs have originated with bona fide scientists; social studies programs from social scientists; and so on. Only recently has it become recognized that there are established academic disciplines similarly relevant to the reading process—the disciplines of language (linguistics) and psychology. To fully understand the reading process, one needs to know something about the nature and structure of language, the nature and structure of the writing system for a given language, and the processes by which children or adults learn these linquistic skills. Quite clearly, psychology and linguistics both contribute to the understanding of the reading process. This overlapping of disciplines has given rise to the relatively new field of psycholinguistics. Not all psycholinguists are interested in reading, but all educators involved in reading instruction should be interested in psycholinguistics.

The purpose here is not to discuss the entire contribution of psycholinguistics research but rather to explore one aspect of the reading question concerned with motivation. As one looks at oral language acquisition (that is, how children learn to speak their native language), both logical and inevitable parallels seem to appear between this learning process and the process of learning to read.

33

One of the myths which implicitly has persisted in education is that all children should learn to read at approximately the same age and, furthermore, that they should *want* to learn to read at approximately the same age. Concomitant with this myth is the equally unexamined assumption that it is the primary task of first grade teachers to "teach" all of their charges to read by the end of the first school year as measured by some normative instrument.

An increasingly popular point of view, however, is that perhaps one does not have to be taught to read, in the same sense that one does not have to be taught to speak. Stated more positively, it is now generally accepted that the parent does not teach the child language, in any sense that one would commonly use the term *teach*. If indeed this is the case, might not an examination of some of the parallels and contrasts between early acquisition of oral language and of reading skills be productive?

First, consider oral language and begin an examination with an early view of this process—typically identified with the behaviorist-associationist school of psychology—which view language acquisition in terms of the following paradigm.

Infants, to their parents' delight and/or annoyance, are vocal creatures during the early years of life. From the first slap on the buttocks, they cry and later begin to babble without much interruption except for sleeping and eating. At about nine months, children happen to produce the noise *da-da*. This phenomena, in itself, should not be surprising since children produce virtually all the phonemes of their language in the prespeech "babbling" period and, indeed, produce a variety of sounds not found in their language. That the frequency of usage of phonemes begins to approximate those of the language during the latter stages of babbling should increase this likelihood. When *da-da* occurs, the reward is instantaneous and positive (especially if "Da-Da" is close at hand. As children make this sound and others, *da-da* is uniquely reinforced. *Da-Da* is now a sound children find pleasing to produce. Its through continued experience and differential reinforcement that the sound pattern eventually acquires its meaning—its attachment to the single, appropriate referent. Similarly, and here is the catch, the entire vocabulary and the entire language—to include sentences—was thought to be acquired through an extension of this process of differential reinforcement and the strengthening of associative bonds between objects and names, between words and thoughts, and, in the case of sentences, between words and words.

Today, there is not a single issue as expressed above that has not been challenged with good cause—from the nature of reinforcement in such instances, to the more theoretical view of language as a series of learned associations. Certainly, the nature of language and its acquisition are far too complex for such a simple solution.

It is surprising, and should be a cause of significant concern, that while students of psycholinguistics and language acquisition have begun to rethink the nature of the language process in most revolutionary terms, the question of reading has remained relatively untouched by this revolution in theoretical psycholinguistics.

It is useful, therefore, to take a closer look at the conditions surrounding the acquisition of spoken language and then to compare these conditions, this climate, to those typically found in the acquisition of the reading skills, particularly in the school environment.

Oral Language Acquisition

The conditions of language acquisition, in a nutshell, seem to be stimulation plus love (we use "love" rather than "reinforcing potential" and run the risk of status-injury as hard-nosed scientists). Consider these essential factors.

1. *Stimulation.* Children are surrounded by it. Parents talk, siblings talk, the TV talks. What is it that children first notice about their parents? They make noises. Indeed, strong evidence exists that infant auditory acuity is not less impressive than their visual acuity, in many areas. The problem surrounding language acquisition is not so much where the stimulation is but, on the contrary, how children extract their models from a much too rich auditory environment. It is especially important to note that this auditory stimulation is not controlled, not structured, not limited to idealized fragments. With the exception of occasional condescensions by parents (baby talk) the language infants hear is completely *natural* language. It is not composed of artificially produced models of perfect sentences, enunciated perfectly and exaggeratedly. That is on the syntactic level. On the level of individual sound pattern, parents and siblings most certainly do not first speak to the infant (or one another in the infant's presence) using only short vowels and a limited number of initial consonants and later adding the long vowels, consonant blends, affixes, compound words, and so forth.

Furthermore, children's early responses to this vast and unorganized amount of stimulation are also random and unstructured. While the example of *da-da* may in fact have some sort of statistical modality for English infants as the first word, it is not unknown to have first words as disparate as *pretty light*, *hot*, and *belly button*.

2. *Identification.* Identification with the parents as love objects has long been recognized by psychologists as a profound motivating force, leading first to the imitation and then to the internalization of perceived parental attributes. This little understood but very dramatic process leads to the acquisition of everything from adoption of parental moral values to sex-appropriate behavior in the developing boy or girl. If, indeed, the parents are love objects, what is it above all else that they do? They make noises! Indeed, it has been argued by some psychologists that noisemaking by infants (babbling) serves to keep the image of this love object alive in their minds. Infants appear to babble more in the absence of the love objects than in their presence.

3. *External reinforcement.* Already cited is the example of the lavish external reward given by *da-da* when that word is uttered. Similar rewards occur with the slow but inevitable increase of vocabulary items. "Baby learned a new word today, Daddy. Come on Johnny, say *doggie*." Few actors ever achieve more acclaim and more sincere external reward than children receive as they learn their language.

Also in the category of external reinforcement there is the reward of the bottle that accompanies *bottle*, the reward of dry comfort that accompanies the utterance of *wet*, and the relief of pain when an anguished *mommie* brings the welcome burping. In the early stages, these rewards can be gained from a simple howl—noise itself often brings reward in the form of attention. In this regard, and to anticipate what will later be said about the acquisition of reading, it is very important to note that the crudest approximations to adult speech are not merely acceptable but are amply rewarded by parents and other adults in the infant's world. A colleague's daughter's first words were *belly button*. But one can attest that a linguist well trained in phonemic transcription would not have noted /bel'y.but'n/ for any example of this utterance. It probably would have defied transcription. Nevertheless, it was clearly *belly button* to the parents and was amply rewarded with laughter and attention.

4. *To convey information.* It may appear surprising that communication should appear this far along in a list of the motivational reasons underlying oral language acquisition. Through differential cries of hunger and pain that can be produced and/or detected, however unconsciously, the child is in some sense of the word "talking." It is only later, however, with the production of recognizable words and sentences, and their comprehension, that informational communication becomes a critical feature of speech. All parents have noted the anger and frustration on the part of children when their rudimentary speech is not understood. At this stage, children are clearly trying to communicate, to convey information about wants and needs. And the patience of every parent has been tried at the onset of the "What's that?" stage—the acquisition of the question—when children's insatiable curiosity about their world must constantly be satisfied by the conveyance of information from parents or other companions.

5. *Self-reinforcement.* Oral language is, after all, fun—the noises, the vibrations, the gurgles. Infants sitting alone in their high chairs talking to themselves soon utilize the rhythms of adult speech even in the later babbling stage. The nonclassic illustration of this self-reinforcement is Weir's *Language in the Crib*. Weir put a microphone in her son Tony's crib and taped his bedtime monologues. Tony was two and one-half when Weir first began this "wiretapping" of her son's conversations with himself and discovered that the boy was actually practicing his grammar, repeating paradigms of his sentence structure—the infant equivalent of the high school Latin student practicing for his test: *amo, amas, amat*. But Tony was doing it for *fun*. This may seem incomprehensible to us as adults who have suffered through hour upon hour of grammar instruction, not only in foreign but in our own language. What other explanation is there for this behavior, which has been systematically described by Weir and universally acknowledged by parents: all kids talk to themselves.

The preceding five points, all relating to motivational and reward factors in the acquisition of language, will be compared with the conditions normally surrounding reading acquisition, on the logical assumption that the conditions under which one symbol system is learned might well be expected to shed direct light on the optimal conditions under which another symbol system is learned.

Before turning to this point-by-point comparison with reading, there are two additional points about language acquisition to be stressed.

Language acquisition is almost universally successful. All except severely physically or psychologically debilitated children succeed in learning their native language if they have the opportunity. (The few cases of isolated or feral children indicate the necessity for a social environment for language to be learned.) There is no observable correlation between success in language acquisition and differences in IQ (except in the extreme cases noted above), particular language, or cultural background. Chinese children acquire language with the same degree of success and at the same rate as children speaking English or any other language. Among English speakers, the "culturally different" children learn at the same rate and with the same success as do "middle class" children.

Individual variation among members of a language community is expected and tolerated. The phrase "at the same rate" in the paragraph above refers normatively to language communities. Obviously, even in the same family, individual children speak their first words at different ages, utter their first two-word sentence at different ages, and so forth. But the remarkable thing is not this deviation from the norm but that among all language communities there *is* a common norm. By approximately four and one-half years of age, all "normal" human children have acquired the basic grammar of their native language.

The important point here is that children who do not utter their first word until eighteen months as compared with children who utter it at ten months are not considered failures in language acquisition. True, some parents may fret about this a bit, or conversely, take great pride in children who speak early. But the climate of language acquisition is not severely altered by punishment and a removal of the optimal conditions for learning. One can afford to wait, be patient, and perhaps even intensify certain aspects of the reward system.

Reading

Concerning the learning of reading the idea that it might be taught as naturally as oral language is growing in popularity as one recognizes the extent to which far more readers than speakers are turned off. Judging only by the comparative success rating, one must conclude that speaking is either easier, better taught, or more natural than reading.

The idea is not new that motivation is important in learning anything in the school environment. Neither is the idea that reward, fairly immediate, must be present for reinforcement of desired behavior. But these factors have always been interpreted according to the behaviorist-associationist school of psychology which has dominated education in this country since its inception. Interpretations have been made from an adult view rather than the child's point of view. Adults have decided what stories children should want to read, what rewards they should value (blue stars, grades, teacher-approval), and, of course, the scope and sequence of skills necessary for the acquisition of reading.

The beginning of this paper presents the conditions of language acquisition from the child's point of view. At this point, let us not compare the motivational reasons for the child's acquisition of oral language with those which might be given for the child's acquisition of reading skills. Or, to put it simply, why should the child want to learn to read?

1. *Stimulation.* Stimulation by example does not occur in reading to the extent of speech stimulation. Reading is, after all, a fairly silent and often unnoticed operation in the adult, at least from the child's point of view. Thus, even in the most literate home, the child may not notice the parent reading. Indeed, in the home of a teacher or student, the child may well get the impression that reading is, if anything, hard work (and hardly pleasure) as the parent is seen (or maybe sometimes heard) reading a difficult textbook.

Perhaps the primary reading stimulation both noticeable and relevant to children is when they are "read to" by parents, or parent-surrogates, as in the case of bedtime stories. Compare the amount of such stimulation, which may vary from none to perhaps an hour or so per day, with the relatively constant speech stimulation during children's early years.

For example, during the reading of bedtime stories, one often (but not always) sees the beginnings of a desire to read. At first it may well center on the warmth and attention children receive during this time; but soon comprehension becomes apparent, with children following the pictures and turning the pages at the appropriate time. Later, many children go through a stage of pretending to read—perhaps paraphrasing the stories as they turn the pages and follow the pictures. Eventually this pretending to read results in children's recognition of some words while taking great advantages of context (linguistic, semantic and pictorial). Some children are so successful at this natural acquisition of reading that they may spontaneously ask for help with particular words when stuck, and parents may give advice and guidance on word attack with the same naturalness or ease as when naming objects for children who ask, "What's that?"

But this kind of home background is not always present. One study indicated that the greatest predictor of success in reading in first grade was the amount of time children had been read to at home. This is not the least surprising, if the comparison with language acquisition is valid.

But the fact is, many children, even with this experience, often do not show spontaneous desire to read. They are quite content to listen to the story, look at the pictures, and enjoy the warmth and attention of the parent. The experience for them is worthwhile, even if it does not lead to the beginning of reading. Indeed, even for those children with this early experience, and for whom the early stirring of a desire to read is present, such rudimentary reading skills are not always appropriate in their schools. This is particularly true with the teacher who uses phonics exclusively or discourages children from guessing. The fact that this use of context, in a sophisticated way, approaches the way adults read, is normally unappreciated and unrewarded by the teacher in the early stages of the acquisition of reading skills in the school. Yes, the ironic fact is that children are discouraged from the guessing with context that marks the very reading behavior of the adult, sophisticated reader! Implicitly, and sometimes explicitly, formal educational philosophy demands that children walk before they run. Thus many children who arrive at school with considerable skill in and motivation for reading are turned off by the teacher who tells them when they make reading errors that they are all wrong, when in fact they are partially correct.

But, of course, for many children this background of reading stimulation is completely lacking or extremely minimal. And this is true, not only of children from low socioeconomic groups where there may be no books in the home or where the parents are completely or semi-illiterate, but also from upper middle class homes where the parents are too busy to take time to read to children and where the bedtime TV program has supplanted the bedtime story.

2. *Identification.* Yes, children do like to do things they know are done by the love-object. As noted earlier, this identification leads first to imitation and then to internalization of the values and role behavior of the love-object. This is true of everything from morality to oral language of the parents—but apparently not

reading. Again, reading is usually a silent operation and not clearly seen. Also—and most important—it is difficult, subtle, and undramatic. Children in this stage of identification are far more likely to take a pencil and pretend to write next to a letter-writing parent than to sit beside a thinking parent and pretend to think. The reading activity is not apparent to children.

What about school? Here, much more emphasis is put on the reading process. Perhaps identification with the teacher (a fairly common and generally desirable thing) will take place. Sometimes this happens but not always. Most of the reading problems in the early years are among boys. Is it that girls develop faster? There is certainly truth to this conclusion, but is that all there is to it? The proportion of female teachers in the elementary schools is high—approaching 100 percent in the first grade. When it comes to identification for the boy, his model is usually a man. In boys' eyes, men are athletes, heroes, repairers of cars. Does the cowboy hero read? Indeed many of them, at least on TV, are not only not seen to read but profess their inability to read. Still, they are the fastest guns in the west!

Teachers read and many teachers are women. Could it be that children see reading, as well as other things encountered for the first time in school (art, music, *silence*) as feminine things? Identification in this case may actually work against the acquisition of reading skills.

To take this point one step further, what if the teacher represents an alien culture? What if the teacher represents "whitey" and the children are black? What if the teacher represents the "outsider" and the children are from an Appalachian "holler"? What if the teacher merely represents repression and conformity and the children come from families that reward free expression and individuality? To admit the problem is not to condemn the teacher. There is a lot to be taught in the early years of schooling, and the process of maintaining simple stability in a class often is virtually a full-time job.

Certainly, if normative results are to be considered, the majority of children regard the teacher as a model, an authority to be obeyed (and many, if not most, parents in the middle-class culture condone this conduct). In these cases, identification is a positive factor. Most children do, in fact, learn to read. That's how norms are established. But this paper is not concerned with the successes of the system, but with its failures. For many children, and it is not unreasonable to say that for the vast majority of the failures, identification is a negative factor relative to the teacher's role in the acquisition of reading skills.

3. *External reinforcement.* Here, in the classroom, at last is something tangible. Praise, punishment, reward, pride, competitiveness, achievement—all can be exploited by the reading teacher. *The only trouble with positive reinforcement for success is that there has to be success to be reinforced*—or at least partial success, to allow for (in Skinner's term) some "shaping." In oral language acquisition, as pointed out before, success is recognized and highly rewarded for the grossest approximations of words, for the most impossible sentence forms (from the adult point of view), and indeed for no words at all in the jargon stage of language acquisitions. The shaping occurs when most parents quite spontaneously begin to cease reward for crude approximations and reserve their praise and/or excitement (both, in this context, are equivalent to reward or reinforcement) for closer approximations to the desired, more correct response.

But then children go to school and begin to acquire reading skills. In the preprimers and in the present conception of skills in all reading programs there is little or no room for partial success or shaping. The word *look* is "look." Read it as *book* or *come* or even *see* (each "error" a type of partial success) and it is not viewed as half-right or even partially right; it is *all wrong*.

Experience indicates that few teachers question this approach, but even if teachers should doubt the validity of the immediate demand for perfection, what are they to do? They have been trained not to reward guessing. They may honestly wish to reward little Johnny—"If he'd only get something right, then I'd reward him." But he never does. He sits quietly and either gets it wrong (lack of reward) or says nothing (lack of reward). What, indeed, is the teacher to do?

4. *To convey information.* In oral language the preschooler knows the communication value of speech. He has learned the profound extent to which an oral language structure can be used to acquire information that is directly valuable and relevant to him.

Now, as every adult knows, really important information is acquired through reading. Here in books is the sum total of man's knowledge.

First graders are interested in a variety of things—from the behavior pattern of toads to rockets to the moon. Children may have watched toads or seen TV programs on the behavior of toads. Their intellectual curiosity is insatiable. How do planes fly? Does a frog have ears? Do dolphins talk?

Adults say, "If you learn to read, you can find out more about these things." And so, it is hoped, children whose interests often exceed adult knowledge begin reading and finding out for themselves why a rocket does not need wings. "Look, Dick, look." "See the ball." It is generally *not* in preprimers that children acquire useful or otherwise interesting information.

To be sure, authors and publishers of basal readers are painfully aware of this traditional problem and have in recent years made serious efforts to produce materials more real, natural, and relevant. But nevertheless, to write *a* story that will be "at the proper grade level" and appeal to the interest of and inform hundreds of thousands of children from every walk of life is a superhuman task. Basal reader people are still largely trapped by "grade-level vocabulary" and by "scope and sequence of skills." If in fact there is a pedagogical reality underlying these terms, it is most certainly at variance with the scope and sequence of the child's spoken language performance and the variety of his or her natural interests and concerns.

But back to the reading lesson. "Very good, Alice. You try the next line, Carl." Perhaps the monotone of the child's reading provides the biggest hint to the artificiality of this oral behavior of reading as it appears to the child. *Reading is saying aloud the right words (in the right way) for the teacher's knowledge of whether you can say the right word.* Reading is something you do in the school room between such and such an hour. Like being a blackboard monitor, it is the school room behavior and has little to do with life. And why should it?

Suppose an adult were told that there is a valuable skill that can bring the rewards of fun and profit: higher mathematics, touch-typing, the IPA, bridge, chess, golf. Suppose it will require several years of hard work, of study of rules and skills, before rewards can be reaped. How many would make this investment? This is a question most can answer all too readily. This, however, may well be the child's position, however unarticulated and unconscious, regarding "reading to acquire information."

Nevertheless, reading is important to children. Many of them are aware of this importance and come to school with pleasurable experiences of reading and the desire to learn to read, whether for fun, to learn things, or just to do things that grown-ups do. For these children the desire to learn to read is already there. But what are they taught? Too often, they go through "reading readiness"—learning to recognize that the dog chases the squirrel up the tree (from left to right); "phonics"—learning that *b* goes "buh"; recognition of words on flash cards; pronounciation of words out of little books in precise sequence. It's not what these children expect reading to be; and it doesn't tell them much they don't already know about life. In short, it does not convey information.

5. *Self-reinforcement.* And now, finally, is reading fun? At a recent international conference in London, it was argued that the games aspects of learning may be stressed more and more in schools of the future. Many already advocate a game approach to reading—that it be fun. Why not? Like any other game, reading involves skills to be mastered, offers rewards for success, and provides competition. The child will play a variety of games with no more practical gain than either winning for its own sake or, ideally, for the sake of playing the game. Games don't usually convey information or bring external reinforcement. Why, then, can't reading—that clever trick of associating visual symbols with recognizable words—be the most-fun game of all?

Many children do enjoy reading, even the artificial dialogue of the preprimer or words in ordinary vocabulary lists. Just as they enjoy most games on many levels, readers discover that the better they become and the more rules and sophistication they acquire, the more fun it is. Is this perhaps the answer to the motivation question? Reading is *fun*?

For many, but not all, children reading is fun. Indeed, could anyone find any game with virtually universal appeal for all children? Witness the vast variety of games and toys on the commercial market and our own failures at guessing children's interests at Christmas time—not all games appeal to all children. Why should reading as a game be, a priori, fun for every child? Indeed, it is not.

Since learning language seems to be fun for all children, why, therefore, not learning to read? The answer seems to be that, in language acquisition, children are allowed, even encouraged to play with language—to approximate, to guess, to be frivolous. But in the school environment, learning to read is a serious thing, with rules and punishments for breaking the rules. Reading is a lesson, done at prescribed times and in prescribed manners. People are quiet during reading time unless they are called on. They wait their turn. They raise their hands. And besides all that, they don't really read.

An analogy though imperfect, comes to mind. Consider the playing of the piano. Many children grow up in musical families, hearing the piano played. It sounds like fun. It is enjoyable. It is done by the love-objects. Stages of banging on the piano keys and producing noises become ways of having fun with the piano. So, after awhile, parents give in and agree to provide piano lessons. And, at least in the experience of some, that's where the fun ends. They learn about finger exercises, how to read treble and bass clefs, that "every good boy does fine," and everyone practices scales. That's *not* playing the piano. That's *not* making music. That's *not* fun. And they quit!

The analogy, like all analogies, breaks down. Some of this may be necessary to learning to play the piano well. But one sees ads in the newspapers assuring potential buyers of new Brand X pianos or organs that they can play real music at the first lesson. This may not really be playing the piano, but it is an approximation of success that rewards and it could lead to the desire to do finger exercises later on.

Phonics is fun for some children, just as puzzles are fun. But some children are disappointed that they are no longer "reading" as they had been reading at home. There, rough approximations of the reading act—utilizing picture and text cues, paraphrasing, telling from memory—all were richly rewarding experiences in and of themselves. And these children were rewarded, not punished, by their parents and siblings.

Conclusions

This argument was begun on the premise that language acquisition is a natural, learned process that is not *taught* in the conventional sense of the word.

To the extent that the circumstances underlying oral language are directly relevant to the acquisition of reading, several points seem clear—indeed, painfully obvious. The first of these is that the power of stimulation, identification, reinforcement, and information differs markedly in the two cases. To a large extent, the motivational differences are perhaps inherent in the characteristics of the two processes: The auditory versus visual (silent) nature of the two; the degree of maturational maturity required; and the fact that oral language usually precedes and influences reading developmentally. However these intrinsic differences hold for reading versus oral language, they hold in a similar fashion among all children, the good reader and the bad. For these differences one clearly must look elsewhere.

To argue the statement a bit further, *all* reading methods succeed to some extent; and, if we can refer again to the First Grade Studies, all methods seem to succeed with approximately the same degree of success and failure. If this is true, one might be tempted to conclude that children learn to read *in spite of* the method by which they are taught.

But certain significant differences in success/failure ratios *do* occur. In a typical white, middle-class neighborhood, some 80 percent (on the average) of first graders achieve normative reading achievement as measured by standardized tests. In Washington, D.C., however, this ratio is completely reversed—about 80 percent fail. In both communities, the same methodology is employed. The authors suggest strongly that the difference lies firmly in the "climate" of reading acquisition as it relates to the pupils.

In both populations, home climates of language acquisition are comparable. Children in both communities are raised in families where stimulation, identification, external reward, communication, and internal reward are comparable. Both groups of children *do* acquire language; but, when it comes to the school climate as it relates to reading acquisition, the differences are dramatic.

Cultural divergence is far from the only factor in reading failure. Reading failures exist within the white, middle-class group so closely identified with the culture of the American elementary school. The artificiality of reading instruction, the conflict of identification between boys and female teachers, the lack of intrinsic reward, the lack of real communication—all of these are felt by many children within the normative school culture. Cultural divergence only accentuates the question, "Why should the child want to learn to read?"

Is there, then, a solution to the problem of reading failure? The writers believe there is. Perhaps the increasingly popular emphasis on the natural approach to reading may supply part of the answer. Perhaps, for example, one can learn to make reading a way of acquiring information; perhaps one can learn to introduce the game of reading in a more "fun" way, just as one can often stimulate interest in a game. Perhaps—and this is most important—one can learn that reading, like dominoes, may be an acquired taste. One can ordinarily live with, accept, and encourage the child for whom interests and appreciations of many things take longer to develop than for other children. One can find rewarding pastimes for the child who has not yet appreciated games of skill. One has learned that children's appreciation may double when they discover things later than does the average or modal child. Can one, in other words, accept as "normal variability" the same degree of variation in onset and early variety in reading as one readily does with oral language?

Can the teacher exert the patience needed with nonreading children in class? Can administrators live with some children in their *care* who are not being taught reading at the "appropriate time"? Can one face—or at least investigate—the possibility that there may be a reading readiness period of a motivational nature as there is surely one of a neuromotor nature and, most important, that this period may vary among children of the same age and intellectual level? Can one admit to the possibility—or at least investigate the possibility—that the overall proportions of nonreaders and turned-off readers might be no more if the implications of this argument were translated into standard classroom philosophy?

These, of course, are not merely pedagogical, academic questions. They are political and social questions, to which there are clear, obvious answers. But will the educational establishment, the reading establishment, and society as a whole accept them?

SECTION TWO

Applied Sociolinguistics and Reading

Dialects and Reading

Pose Lamb
Purdue University

Although other processes may also be involved in the reading act, there is, currently, general agreement that reading is at least a *language* process and a cognitive process. The successful reader is engaged in what Sticht and others (*20*: 11) term "languaging,"* combining conceptual and linguistic activity. The close relationship between cognitive and all facets of language is brought into clear focus in considering dialect and its influence on reading achievement. Cazden (*2*) defines dialect as "a variety of spoken language that initially represented divergent geographic origins but may now represent social groups within a community." Dialect speakers, typically, can be understood by other speakers of the language used and, while the dividing lines are not at all clear, this criterion is the most frequently applied in differentiating between a dialect and a language. West (*25*) contends: "One of the most common, and valid, characteristics of the language is mutual intelligibility.... Within a single language community, particularly if it is large, there will probably be subgroups who speak the common language, but with differences in pronunciation, vocabulary, or other linguistic components. But as long as the different subgroups still understand each other, the language variations are called dialects." If one accepts as valid the almost stereotypic language strands—phonology, morphology, syntax, semantics, and vocabulary—*all* reflect the influence of dialect and that variant of dialect, ideolect, which signifies the unique and highly creative nature of each person's language.

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*Languaging: Representations of conceptualizations by properly ordered sequences of signs, or the inverse process of understanding the conceptualizations underlying the sequences of signs produced by others.

It has already been noted that dialects reflect various geographic regions and various levels of society as well. One might wish that the adoption of the speech and writing patterns of one's family and other close associates didn't have such tremendous implications for personal, academic, and vocational or professional success, but such is not the case. Some dialects are much more prestigious than others, and those who don't speak a prestigious dialect operate at a disadvantage—minor or major, depending upon a variety of other factors, but a disadvantage, nonetheless. Regarding the issue of standard versus nonstandard usage, and clearly stating some lexicographers' position on this issue, those responsible for a recent edition of Funk and Wagnalls (*4*) wrote:

> The educated person who is conscious of a good upbringing is apt to assume that his own way of speaking is normal English and that those who speak differently speak a "brogue" or "dialect." But the truth is that we speak a dialect—the dialect of our social group. This is the condition by which we make ourselves easily understood and avoid seeming odd.
>
> It may be that at some future time the English speaking people will call an international orthoepic congress, with a view to discussing dialect differences and agreeing on a convenient eclectic norm, which could then be taught in schools by means of standard phonographs. The lexicographer would then have a real if more or less artificial standard; but until then, the idea of a standard pronunciation must remain somewhat chimerical. In the last analysis, it must mean someone's preference. But no one has been appointed supreme arbiter, or given the right to speak for (those) who now use the English language.
>
> Under some circumstances, the dictionary will do its duty best by faithfully reflecting the facts of refined usage and describing the more important of the existing differences, without claiming superiority for the speech-habit of any particular locality or social group.

Of course, the author's choice of "refined" as a descriptor for the acceptable pronunciations included in a dictionary clearly marks his position on this sensitive issue.

To accept as reality the existence of prestigious and nonprestigious dialects is not to suggest that dialects exist in some rank order of acceptability. Cazden (*2*) makes this point very well.

> Is there in fact a single variety of English used by educated speakers throughout the United States? The answer to this question depends upon which aspect of language is being considered. In pronunciation there is no single standard. Regional variations in 'accent' exist and are widely accepted without social stigmatism.... In syntax, by contrast, a single standard does seem to exist.

The entire issue of variability in code-switching is extremely complex and of great interest to educators. Nonstandard dialect speakers comprehend standard dialects at the receptive level, aurally at least; and, when the situation demands it, many, if not most, can produce it as well. It should also be noted that those classified as standard dialect speakers occasionally make homophones of pin and pen, omit the *h* sound at the beginning of who and when, and have been known to minimize or even omit part of *-ed* and *-ing* endings. It appears that Noam Chomsky's goal of the ideal language user has yet to be reached. The problems created will be referred to later when dialect readers are discussed as potential aids in solving the dilemma related to black pupils' reading achievement.

While it is true that there is some controversy regarding the precise nature of standard dialect, and it is clear that there is tremendous variability in both standard and nonstandard dialects, most would agree that the language the majority of middle and upper class youngsters use when they begin school does *not* provide a barrier to achievement in reading. This condition is not equally true for low socioeconomic-status (SES) children, and there is justifiable concern for their poor achievement. Some writers, researchers, and/or educators have suggested that a major cause for this poor achievement is the poor match between the nonstandard dialect the low SES children speak and the standard language of the text and trade books they read. For this reason, the primary focus of these remarks will be on low SES children and the relationship between their productive and receptive language competencies. Because so much attention has been directed toward low SES black children, they are the focus of most of the recent data reported and opinions summarized. It should be stated that many blacks, for a variety of reasons, speak standard English, and cannot easily be distinguished from white speakers of standard English. A number of solutions have been proposed, based upon different premises; and, to date, none has the unqualified support provided by a mass of empirical data.

First to be discussed is the *eradication* theory, which is based upon the premise that black language is deficient and reflects the limited cognitive development of most blacks. Bernstein's concepts of restricted (low SES) and elaborated (middle and upper SES) codes are central to this solution. Low SES children must learn to use standard English exclusively, not only to succeed academically but because their cognitive functioning will be strengthened. The first flaw in this theory is that it is completely impractical. Nonstandard dialects will never be eradicated, nor probably should they be. To say that children who speak nonstandard English will be more successful academically, if they learn to operate comfortably with middle class language, is different from saying they must completely abandon a language which has served their communication needs very well and is the language used by those individuals who are significant to them. Johnson (*10*) writes:

> The majority of black children are normal in their facility to use non-standard negro dialect, the language of their primary cultural group. That they do not use standard English does *not* make them non-verbal.
>
> These children are raised in an environment that is more dense than the environment of middle class children; thus, they hear as much, and maybe more language than middle class children.... It is likely, then, that disadvantaged black children have as many models to informally teach them language and audiences on which to try out language, as middle class children.... The demand that black children replace non-standard negro dialect with standard English is an impossible demand as long as black children must live and function in the disadvantaged black subculture.... standard English should be taught to black children at a much later stage in their education than it is now taught. In order words, it must be taught when black children have a recognized need to learn it. Then, it must be taught as an alternate dialect.

Adoption of this eradication approach would probably have little impact on most reading programs because authors, publishers, and teachers currently operate on the assumption that low SES children can at least understand divergent dialects and that the dialect presented in the readers and/or trade books is an appropriate language for instruction. The extent to which nonstandard dialect interferes with reading achievement has *not* been determined, and until we have conclusive evidence that the interference is major and seriously detrimental, it is not likely that basic reading materials will change. As they are, such materials are probably not viewed negatively by the eradicationists, particularly since the language model presented *is* standard English, with little consideration for the variations in pronunciation, word endings, and syntax typical of some varieties of nonstandard English.

The second proposal for dealing with nonstandard dialects could be called bidialectal or biloquial. It represents a compromise, a middle position, between the eradicationists and the small groups who contend that complete acceptance of nonstandard dialect is the humane, the democratic, the equalitarian solution to the problem. Advocates of the bidialectal position suggest that, by providing an alternative dialect, one permits the child access to the middle class world—and perhaps greater opportunity for academic and professional success—without depriving him of the code, which makes it possible for him to continue to operate effectively with those who are closest and most significant to him.

Fasold and Shuy (*22*) note:

> Most linguists will agree that a speaker of any language will make linguistic adjustments to specific social situations. These adjustments in phonology, grammar, and lexicon will range anywhere from the obvious adjustments between adults and small children to the more complicated sociolinguistic switching between school, home, and playground talk. Those who advocate the adoption of biloquialism feel that the teacher's job is *not* to eradicate playground English, or any other kind. Instead, teachers should help children to make the switch comfortably from one setting to another.

The NCTE task force (*14, 16*), reporting more than ten years ago and calling their report "Language Programs for the Disadvantaged," wrote:

> The NCTE task force recommends that children be permitted to operate in the dialect of their community at the lower levels of elementary school education, and that direct instruction in the use of standard informal English be begun no later than the intermediate elementary grades.
>
> During the early stages of development in school, children must become acquainted with language in general, with its uses in thinking and communicating; many of these experiences must be provided through the dialect which they already speak. As children gain experience in listening to and understanding informal English, especially through contact with teachers, school programs can gradually begin to teach standard, informal English.
>
> This does not imply, of course, that children not be exposed to standard English dialect or that actual instruction in the use of

> standard English is more appropriate and effective after children have experience listening to and understanding it from television, radio, and, especially the teacher.

Acceptance of a biloquial or bidialectal solution to the problems of the young child who brings a variety of nonstandard English to his first encounters with print raises several issues. The first issue has just been suggested. If variation between textbook language and the child's language is viewed as a barrier to successful beginning reading, is one justified in recommending delay in introducing, or even emphasizing, standard English? Specifically, should exposure to *-ed* endings, the *is* copula, pronunciation of *r*'s and *l*'s accompany the first reading lessons in which these prominant nonstandard dialect features occur? The answer depends upon how serious the mismatch is.

Knapp's findings (*11*) are of some significance in considering this issue of interference. She studied the relationship of sex, age, ethnic group, and socioeconomic status to the development of an awareness of the social significance of language dialects. Eighty children, grades one and five, were given four tasks. They were asked to indicate the differences in paired sets of sentences, one in black English (BE) and the other in standard English, (SE). Next, they were asked to identify whether BE and SE sentences were said "the right way" or "the wrong way" from a teacher's point of view. Finally, they were asked to identify speakers of black English and standard English by race and then by social class. Knapp reports: "The resulting data revealed that awareness of the social and racial significance of dialect does increase from first to fifth grade. On the other hand, awareness of standard forms as being what a teacher would say...was already well established by first grade." This study suggests, at least, that bidialectalism is achieved without much direct instruction, and at a fairly early age. Desire to please the teacher is strong among most first graders and appears to be a stronger factor in successfully stressing the need for code switching than telling young children they will get better grades or find better jobs if they are comfortable with standard English in appropriate situations. Knapp further concludes: "The Labov hypothesis that early adolescence is the stage during which the child becomes aware of the social significance of dialect characteristics is applicable to the current group of subjects, but there may be resistance among black children to identify with their own dialect."

Torrey (*23*) studied the language patterns of twenty-seven Harlem, New York, second graders. She reports:

> These children were interviewed and tested to find their competence in spontaneous speech, oral and written comprehension, oral reading, and explicit grammatical knowledge in standard English morphemes often missing in Black English. The data show large individual differences in the ability to use standard forms and low but significant correlations between speech and reading performance.

Gumperz and Hernandez-Chavez (*6*) contend:

> There is little if any experimental evidence...that the pronunciations characteristic of urban black English actually interfere with the reading process...on the contrary, a recent study, using testing procedures specifically adjusted to black children, shows that children who fail to distinguish orally between such word pairs as "jar" and "jaw," "toe" and "tore" "six" and "sick" are nevertheless able to distinguish between them in written forms.

It cannot be stressed too strongly that the results of these studies, and others, suggest great variability in the black English items used and, probably of more significance to reading teachers, great variability in the ability to switch codes and to operate with standard English in both the productive and receptive facets of language.

Simons (*17*) has prepared an extraordinarily thorough review of the research relating to dialect interference with reading achievement. He concludes:

> It is not possible to draw any firm conclusions about the existence of phonological interference on the basis of available evidence. However, the evidence there is tends to be negative. There is also insufficient data about grammatical interference, but what there is also tends to be negative.
>
> However, the generally negative but inconclusive evidence reviewed here, even discounting the methodological and conceptual problems with the research, suggests that the original strong hypothesis of reading interference may have to be revised and qualified to take into account other factors. It appears likely that if black dialect interferes with the acquisition of reading skill, it does not interfere for all black dialect speakers in all educational situations.

The lack of definitive evidence regarding the phonological, morphological, and syntactic items in black dialect which cause the *most* interference with successful reading achievement, and the body of evidence suggesting that there is great variability in the nature of the dialects characterized as "black," call into question one of the most frequently proposed solutions to the dialect-reading problem: the use of dialect readers. These are books in which the same selection is written two ways—in standard English and nonstandard English—and the two versions appear side by side. Typically, only one area of divergence—the absence of the copula, perhaps,—is worked on at a time, and the two dialects gradually become one. That is, by the end of a series, "school talk" and "everyday talk" are indistinguishable. Strickland opposes the use of dialect readers *(21)*.

> While agreeing with the premise that divergence between the language of the learner and the language of the school impedes the acquisition of reading skills, I must disagree with the use of nonstandard dialect materials as a solution to the problem. These are my reasons:
>
> 1. Such a program must assume that there is one universal nonstandard dialect which all disadvantaged black children speak. In effect, it may impose upon some children another dialect with which to contend besides standard English which they will inevitably meet.
> 2. Most black parents object to the use of such books as initial instructional materials for reading. Whether or not their objections are based upon misinformation is unimportant when one considers the potential erosion of school-community relations and the resultant disruption of the learning process which would follow.

It might be added that teachers' frequently negative attitudes toward black English, especially when black English is given the status of being printed in a book, can be a barrier to learning as serious as that presented by the nonstandard language itself. Strickland continues:

> 3. The use of initial reading materials which are based on the individual child's own language might be a better alternative. Personal experience stories using the child's dictation as the content and the teacher as scribe can serve as an important tool for introducing reading.

She concludes with a plea for better teacher training—a clear and urgent need.

The language experience approach, to which Strickland refers, has been suggested as a means of helping a child see a match between his speech and written language. Cramer *(3)* writes:

> The language experience approach is predicated on the notion that reading can be most meaningfully taught when the teaching materials accurately reflect the child's own experience as described by his language. The language of instruction, then, must be that which proceeds from the wealth of linguistic, conceptual, and perceptual experience of the child. A child is more likely to learn to read when the activities associated with the approach have functional relationships with his language, experiences, needs, and desires.

The possibility of a negative teacher attitude can also be a serious deterrent to pupil achievement if this approach is used. Efforts to combine instruction in reading with lessons on standard grammar are not likely to be productive. Furthermore, major adjustments in the syntax the child dictates could result in a linguistic mismatch and a diminished self-concept on the part of the pupil. "He workin" or "She be home" must be genuinely accepted by the teacher and written as dictated, in the syntactic sense, at least. (There appears to be general agreement that phonological elements of nonstandard dialects would be difficult to transcribe and would make the transfer to standard English at least as difficult as the transition from i.t.a. to t.o. The syntax, however, should be recorded *as dictated*.)

So much has been written in praise of the language experience approach, particularly for "culturally different" pupils, that it is beginning to assume the dimensions of a panacea. In addition to the teacher attitude problem referred to previously, two items from the writers' personal experience with the approach may help to put language experience in perspective. The approach is no more a panacea than is any other. First, in a study comparing the achievement test scores of innercity pupils, five classes using language experience and five using a modified basal reader approach, results showed no statistically significant difference between the two groups. Further, it was noted on several occasions the pupils could not recall with a high degree of accuracy the precise language they had dictated only the day before. On a positive note, it should be stated that all five of the language experience teachers requested permission to use the approach the following year, although the project had ended.

In concluding the discussion of the varying proposals made by those favoring biloquialism or a bidialectal approach, the following comment by Smitherman (*19*) is especially appropriate:

"Black English is an important topic of concern in educational circles since its speakers comprise the largest group of minority students (and, of course, black idiom speakers outside of school are the largest group of minority dialect speakers). For, make no mistake about it, bidialectalism concerns itself with the situation of ethnic and class minority students. Don't ever think for one minute that anybody is talkin (sic) about makin (sic) white and/or middle class kids bidialectal." According to Smitherman, the thrust is entirely toward making the "outsiders" talk like "insiders."

The position taken by Smitherman, and others, is that black English is a perfectly valid language, which should be accepted as it is. In fact, it might be as justifiable to ask standard English speakers to become comfortable using black English, or any other nonstandard variety of English as to do the reverse—certainly a provocative suggestion! Whether one is willing to go this far, it is clear that one's attitude toward black English or any other nonstandard dialect will significantly influence the way one teaches pupils who use it. It very well may be that this represents the most fruitful area of future research. Changing teachers' attitudes toward nonstandard dialects, in a more positive and accepting direction, may prove to have more positive effects on the reading achievement of pupils who speak these dialects than changing materials, or methods, or insisting on changing the children's language in a total or basic sense.

Despite the evident concern and the wealth of data which have been accumulated, it is clear that one still must seek solutions for helping speakers of nonstandard dialects achieve success in reading. It is possible that one large part of the solution to this major educational problem is not through reading methods or materials but through the teachers who work with these pupils. As teachers acquire more positive attitudes toward the worthiness of pupils and parents and learn to respect their dialects as useful and valid, although different, then the reading problem may become far less serious. The hypothesis is well worth testing!

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Black Dialect and Reading: Which Differences Make a Difference?

Jerrie Scott
University of Florida

Theories about the relationship between spoken language and interpretations of written language have prompted debates about whether reading problems encountered by black dialect speakers are related to differences between spoken and written language structures. It is logical that if the reader is searching for correspondences between spoken and written language patterns, and if the spoken and written codes differ, an individual might have problems connecting the two codes. However, in applying this logic to practice, it is of utmost importance to ask, "Which differences between spoken and written language are important to reading comprehension?"

To explore this question, relevant research is reviewed with special attention given to the question of whether specific structural differences between black dialect and standard dialect affect the readability of grammatical patterns. Implications of research findings are discussed in relation to theories on dialect interference and teaching strategies.

Research on dialect interference and reading was initially centered around identifying points at which spoken black dialect was most likely to interfere with interpretations of written standard English. Some investigators devised tests for identifying points of interference based on structural differences between standard and black dialect. Labov's word perception test (*5*) was designed to allow for easy identification of phonological deviations in the speech of black children. His sentence repetition test was devised to facilitate identification of grammatical deviations from standard English.

Baratz (*1*) also designed a sentence repetition test which provided information to be used in producing dialect based texts. The utility of word perception tests and sentence repetition tests is that the points at which dialect interferes with reading are reflected by the structural deviations found in students' responses to the tests.

Evidence presented by Ruddell (*9*), Goodman (*2*), and Melmed (*6*) questions the importance of structural deviations to reading. The important point here is that word perception and sentence repetition tests are basically tests of productive competence in standard English. Results indicate that there is a translation process in effect when a child is presented with standard English pronunciation patterns or grammatical patterns which he repeats using dialect pronunciation patterns or grammatical patterns. Implicatively the same kind of translation may be in effect when a dialect speaker is presented with materials written in standard English. For the most part, this translation process is viewed as a reflection of the child's receptive competence of both spoken and written standard English.

For example, Ruddell points out that children who read "He will go" as "He go" were demonstrating a high degree of language competence, implying that the message was received but was translated to the child's own means of expression. Using samples of what he called reading miscues, Goodman reports that children who read "they was going" for "they were going" were demonstrating a high level of reading comprehension. Based on Goodman's reading model, this kind of miscue indicates that the child has recoded the graphic cues, decoded the message, and orally produced the message in his own dialect.

Melmed constructed a test to determine the influence of a different phonological system (i.e., the black English phonological system as described from linguistic research in urban areas) on the recognition of words. His test included words that are distinct in standard English but nondistinct or homophonous in black English. The children in Melmed's study read 28 percent of the pairs using black English phonology but in only 5.4 percent of the cases did the children choose the wrong picture to match the words. Findings such as these suggest the possibility that black children's receptive competence of standard English is not always reflected by their oral output.

Studies have been conducted to determine the level of receptive competence for young children. Ramsey (*7*) presented stories to two groups of black children. One group was presented stories in black English and the other group was presented stories in standard English. She found that black first graders comprehended stories presented in black English and standard English equally well, with one exception. Slight differences were noted in the ability to detect inferences, with the group that hear the stories in black English showing slightly higher abilities. This slight difference in detecting inferential information in standard English may be quite significant. Results from standardized reading tests clearly indicate that performance on inference type questions for black children is at a remarkably low level. This deficiency has been of great concern to teachers in Detroit Public Schools who are faced with this test result year after year. Interpretations of the relationship between low standardized reading test results and the slightly lower ability of black students to detect inferences in standard English must be approached with caution since several other variables may also be influencing these results. Semantically, inference type questions are more complicated since they elicit new information. Teaching methods tend to focus less on teaching children strategies for dealing with inferential information than on testing children for proficiency in that area. Nevertheless, this whole problem emphasizes the fact that, as yet, it is simply not clear how factors related to receptive and productive competence influence interpretations of written standard English.

Assuming that some language varieties may interfere with the acquisition of reading skills more than others, attempts have been made to reduce the mismatch between the language used in reading materials and children's spoken language. In a study of Appalachian whites, Rentel and Kennedy (*8*) tried to determine whether children exposed to pattern drill exercises would perform better on reading tasks. The study did not find significant differences between the control group and others, indicating that the focus on children's language was not particularly useful. However, when Tatham (*11*) changed sentences in the reading materials to match sentences produced by a group of white children, results indicated that the children comprehended more when the reading materials contained patterns similar to their speech. In contrast, when Johnson and Simons (*4*) focused on changing the language of materials to match the spoken patterns of black students, the educators found higher levels of comprehension with a standard text than with a dialect based text. These conflicting results indicate a need to determine which correspondences between spoken and written language are important to reading. If reading difficulties are to be attributed to the language in the materials, it is important to ask what makes the language in materials easy or difficult for black children to read.

One would assume that if the mismatch between structural features of spoken and written language patterns caused serious interference problems, the readability level of patterns would increase as the mismatch was reduced. This assumption was not supported by research findings from Scott's study (*10*) designed specifically to determine the readability level of grammatical patterns for a group of black first graders. Rather, results showed that the readability level of patterns did not increase (and sometimes decreased) when patterns were presented in black dialect.

Before proceeding with the discussion of those findings, it is important to note that four rules were used to translate twenty-three basic sentence types from standard to black dialect: 1) Pronoun insertion, 2) Inflection for number, 3) Copula deletion (present tense), and 4) Auxiliary deletion before progressive verbs (present tense). The translation rules generated black dialect sentences similar to those found in dialect based texts. Examples of sentences generated by the four rules are the following:

Standard Dialect	*Black Dialect*	*Rule*
Mother walked the dog.	Mother she walked the dog.	1
They were on big boxes.	They was on big boxes.	2
Jimmy is a big boy.	Jimmy a big boy.	3
She is working in a school.	She working in a school.	4

A group of forty black first graders, twenty high ability and twenty low ability readers, were given a sentence-comprehension test. The tests consisted of sentences written in standard and black dialect as indicated by the preceding rules. Each sentence contained an open frame in final position. Students were to select one of four word choices to complete the sentences. Responses to sentences representing each pattern were examined to determine the effects of reading ability and different representations of the patterns on reading ease.

For this discussion, three research findings are particularly important:

1. Patterns presented in black dialect were usually not easier for first graders to read than those presented in standard dialect.
2. Standard and corresponding black dialect patterns were usually of similar reading ease for the more proficient readers but not for the less proficient readers.
3. Standard and corresponding black dialect patterns that were of similar reading ease were not necessarily affected by the same translation rules.

These three findings provide additional reasons to question the significance of specific structural differences between standard and black dialect to reading. Since those particular features of language representing differences between standard and black dialects did not have an important influence on readability, the points at which black dialect is expected to interfere with reading need to be reexamined. Noting that recent theories of reading reject the notion that reading is a precise process involving specific identification of all structural elements of language, one might look to such theories for new directions in identifying points at which dialect interferes with reading.

For example, one wonders to what extent young readers (any dialect) use prediction strategies based on specific structural features of language. In listening to black dialect speakers read, it is interesting that many students produce standard dialect structures when patterns are presented in black dialect. And, conversely, many students orally produce black dialect structures when patterns are presented in standard dialect. One immediately suspects that the deviations from the written text are related to students' expectations and, having noticed no conflict between predictions and intended meaning of the text, the mismatch between oral output and written representations tended not to be important. Apparently, students' predictions can provide useful information about their expectations of written language.

In essence, learning to read will be facilitated by the extent to which there are correspondences between what the reader expects and what he finds in print. Discrepancies between the two are potential dialect interference problems, only if the intended meaning of the text is not grasped. The focus here is on mismatch between student interpretation and the intended meaning of the text, as opposed to mismatch between student pronunciation and the written representations of conventional materials. Research in this area is needed for two reasons: first, all students will benefit if it can be determined which structural elements are most important to readers at various developmental stages of reading; and, second, if dialect interference theories are to be useful to practitioners, more specific information on features that interfere with meaning derived from printed materials is necessary.

In diagnosing reading problems, implications for teachers are related to those for theorists. That is, one cannot assume that all variant pronunciations of written forms are significant to an individual's interpretation of written language. Thus, teachers need to develop diagnostic strategies that will help determine when (and if) dialect pronunciations interfere with the intended meaning of the text. For example, it is conceivable that a child who consistently reads sentences such as "He ran to the store" as "He run to the store" might experience unusual difficulties in sequencing activities of a story, but it is also possible that this same child has learned to use other grammatical forms (e.g., adverbs of time) for sequencing clues. Nevertheless, a couple of indirect questions regarding the time or order of events will readily reveal whether the variant pronunciation affects the mastery of the skill. Emphasis here is placed on the need for teachers to explore and discover diagnostic strategies for determining whether a child's variant pronunciations coincide with diagnosed reading problems in the area of comprehension. After all, if learning to read is a "psycholinguistic guessing game" (Goodman's term), so is teaching reading. If diagnostic strategies are expected to reduce the number of incorrect guesses teachers make about variant pronunciations and reading interference, reading comprehension problems must be considered. On the other hand, one can try to reduce the number of incorrect guesses that black dialect speakers make when reading conventional materials by making wider use of preventive strategies. Implications for preventive strategies are also found in the findings previously reported.

Findings two and three imply that the readability of the patterns was more dependent on the sentence type than on the structural variation found between standard and corresponding black dialect patterns. Notice that although the more proficient readers found the two sets of patterns similar in reading ease (see finding two), those patterns that were similar in reading ease happened *not* to be structurally related (see finding three).

Ironically, differences that did occur between the readability levels of the two sets of patterns were generally in favor of standard dialect and were found in the responses of less proficient readers. The irony of the matter is that such changes are usually directed toward helping less proficient readers but the patterns became harder to read, rather than easier. From all indications then, readers who differ in reading ability may vary in the amount of attention given to particular elements of written structures, and reading success of the more proficient readers could be related to their tendency to depend on basic elements not subject to structural variation. Undoubtedly students will benefit from activities that focus on basic sentence types rather than those elements within sentences that represent differences between spoken black dialects and written standard dialect. As a preventive strategy, teachers might make wider use of materials that increase student awareness of syntactic constraints as opposed to morphological constraints in English.

Two alternatives are readily available to teachers. One has to do with materials developed in the classroom and the other has to do with selection of activities found within conventional materials. Neither represents a drastic departure from present practices; the emphasis, rather, is on wider use of certain activities in cases where dialect interference problems might occur.

Jaggar's discussion (3: 96) of the benefit to be gained from making beginning reading a language experience for black English speakers emphasizes the need for producing reading materials in the classroom:

> The language experience approach is based on the relation between oral language and reading and capitalizes on the black child's competence in his native dialect. His language patterns determine the patterns in the reading material, minimizing the interference from mismatch between oral and written patterns.

It is not unusual for teachers' manuals of basal texts to include suggestions for the production of classroom materials. However, these suggestions frequently occur as enrichment or supplementary activities. Teachers, consequently, often omit them because of time limitations. The implication here is that such activities provide useful means of alleviating the mismatch between oral and written patterns and should be considered as basic to instructional programs for black dialect speakers. So, one is not changing activities but reordering priorities; language experience stories become basic, if not first, in the instructional program. This approach does not suggest that teachers ignore the development of decoding strategies having to do with specific phonemes or morphemes; rather, it implies that decoding strategies developed in relation to structures elicited from students will be more relevant to the task at hand, i.e., reading for meaning.

Reordering priorities can also lead to guidelines for selecting conventional materials. To cite a few examples, one would want to consider whether

1. materials provide detailed information and useful suggestions for developing language experience activities;
2. stated purposes and goals of materials reflect concerns for utilizing language competences of students in instructional methods; and
3. provisions have been made to include patterns that are familiar to students in the instructional materials.

By using these kinds of guidelines, teachers will gain information as to how conventional materials fit into their own set of priorities.

Just as the production of materials in classrooms and the selection of conventional materials were centered around utilizing student language competences, so are suggestions for selecting activities from conventional materials. Of the numerous activities presented in materials, those which require students to activate their knowledge about constraints in language are highly valued. Activities that tap students' tacit awareness of linguistic constraints are usually centered around student intuitions about word order, grammatical and/or lexical appropriateness of forms in a given context, and features of language that can be manipulated to convey different information or variable representations of the same information. Since the stated purposes of such activities may not be presented in the context employed here, it is useful to give a few examples of items that may be associated with the three categories above.

Activities that tap student intuition about word order constraints are frequently found in beginning materials as visual skill activities. For example, students may be asked to decide what is wrong with familiar phrases such as "Birthday Happy," or "Mc

Donald Ronald." Analogies are made between left-right eye movement and the order in which words are said and written. For children who have learned to recognize words in print, some activities require students to rearrange jumbled words into a meaningful order or to rearrange words to arrive at a different meaning (e.g., "Mary gave John a ball" rearranged to "John gave Mary a ball").

Numerous activities are available that tap student awareness of grammatically and/or lexically appropriate forms in a given context. During the early stages of reading, the activities elicit oral responses while written responses are usually elicited from older students. However, more opportunities for oral responses by older students and written responses, accompanied by picture clues, for younger students would be useful. For example, students may be asked to complete sentences of stories containing highly predictable patterns. To provide practice with using certain patterns of language, students are also asked to tell or write stories using a prescribed pattern. Often students are asked to select appropriate words by substituting similar word forms (I *saw* a *bear*—I *heard* a *cat*) or by predictions based on preceding forms ("I am a girl, that's what I ____"). These exercises give students opportunities to build up a repertoire of expectations for written language. By viewing them as activities that tap student awareness of syntactic constraints in language, in addition to other purposes as expressed by the authors, one can logically expect to safeguard against potential dialect interference problems.

Finally, activities that give students practice in manipulating language to achieve certain results are more difficult to find in conventional materials than those in the other two categories. Since reading success is usually measured by student responses to comprehension questions, it would be useful to present activities that help students formulate questions. Quite frequently students gain practice classifying statements according to their appropriateness as responses to direct questions (i.e., questions requiring *yes* or *no* responses) or through indirect questions (i.e., questions requiring information concerning *who, what, when, where, why,* and *how*). Following such activities students could be given practice with changing statements to questions similar to those which they are often expected to answer. For example, direct questions can be easily formed by transferring the verbal element to the front of the sentence (e.g., The boys *were* in the wagon. *Were* the boys in the wagon?). Indirect questions can be easily formed by deleting the element questioned and attaching a question word and a verbal element to the front of the sentence (e.g., The boys looked scared. *How did* the boys look?). In this regard, most teachers will agree that children who ask good questions also tend to give good responses to the questions asked. In cases where dialect interference is a potential problem, it is important to spend time helping children ask the kinds of questions they will be expected to answer. In this way one can avoid confusion that might stem from misunderstanding questions that frequently occur in conventional materials. It is apparent, then, that students will benefit from practice in manipulating language to convey different kinds of information—in this case, statements and questions.

Paraphrasing is another means of providing practice in manipulating language; but here the focus is on variable representations of a single meaning, a point at which dialect interference problems may surface when inferential information is requested. For example, a sentence like "I think you are sick" may be represented as "I think *you're* sick," "I think *that* you are sick," "I think you_sick," "You are sick, I think," etc. Notice that "sick" can be interpreted to mean physically ill, in which case the speaker is concerned about someone's physical health, or mentally ill, in which case the speaker is accusing someone of acting irrationally. The choice of a stylistic variant may affect the intended meaning of the sentence—one reader may continue reading with expectations of more sarcastic statements, whereas another might expect sincere statements about physical health problems. The value of this kind of activity is that it leads the reader to become aware of subtle differences that occur and other kinds of information that can be used to arrive at the intended meaning of the writer.

Thus, in order to help black children avoid prospective dialect interference problems, teachers may either produce reading materials based on student language or use conventional materials, being careful to select activities that provide opportunities for students to increase their awareness of syntactic constraints in written language. Such activities provide opportunities for students to build a repertoire of expectations related to basic sentence types. Suggestions are based on the conclusion that correspondences between spoken and written language that are based on student prediction of basic sentence elements are more important to reading than correspondences based on student predictions of specific structural elements within patterns.

In summary, this paper reviewed research relevant to problems of dialect interference and reading. Having noted that many issues remain unsettled, it is possible that structural variables associated with black dialects interfere with interpretations of written language at some level. However, evidence presented in this paper suggests that sources of dialect interference problems are more subtle and complex than the structural mismatch between spoken and written forms usually identified. Emphasis is placed on the need to reexamine dialect interference theories. Psycholinguistic theories of reading may offer new directions for identifying points of interference that are most important to reading comprehension. For maximal effectiveness in the practical arena, questions concerning "which differences make a difference" need to be addressed. In the meantime, teachers might concentrate on developing and using diagnostic strategies to determine when variant pronunciations interfere with reading comprehension. Strategies that could prevent prospective dialect interference problems are available to teachers and will be used more effectively if one reorders certain priorities and makes wider use of carefully selected activities that increase student awareness of syntactic constraints in language.

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A Semiforeign Language Approach to Teaching Reading to Bidialectal Children

Mary R. Hoover
University of Pennsylvania

Robert L. Politzer
Stanford University

Shirley Lewis
Stanford University

The failure of the schools to provide adequate reading programs for bidialectal students—students who understand two or more dialects but may speak only one vernacular, such as black English, Hispanicized English, native American English, or Appalachian English—has been well documented. According to federal statistics, 40 to 50 percent of the students in American cities have serious reading problems. Bidialectal students make up a disproportionately large percentage of these groups. Harber and Bryen (*16*) offer a summary of issues surrounding vernacular English speakers and the teaching of reading.

Bidialectal speakers are also victimized by the fact that their languages are often stigmatized and misunderstood. As recently as 1975, an expert in the field of reading instruction described speakers of black English as "language handicapped" and the speech itself as "prolific in errors" (*34*). That these languages are stigmatized is seen also in the literature on teachers' low opinions of vernacular speech and the implications for pupil achievement (*11*, *30*).

In addition, the various sociolinguistic rules of the speech communities of bidialectal speakers are often not explored or ignored. For example, linguists who suggest that reading materials be written in vernacular black English either ignored or neglected to assess a sociolinguistic rule in the black community—that vernacular English is highly valued in certain situations but that parents want the language of the school to be a more standard variety of black English (*18*). Taylor (*37*) calls this more standard variety "standard black English."

Bidialectal speakers have also been denied access to instructional techniques and materials which work well for teaching them. Van Geel (*39*) suggests that the *Lau versus Nichols* suit, which established the right to equal access to successful instructional programs for bilingual students, be extended to include bidialectal speakers. For example, it has been demonstrated that group-oriented activities work well with bidialectal children (*27, 10*). A number of other programs (*17, 41*) have demonstrated success in teaching bidialectal children, yet there appears to be little attempt to duplicate components of these programs in our classrooms.

So far, efforts to improve performance of bidialectal speakers have taken two main directions: 1) construction of vernacular black readers in which speakers of vernacular black English are exposed to initial reading in their native dialect (*35*), and 2) the use of a foreign language teaching methodology to give the speaker of the vernacular oral control of standard speech patterns (*12*). Both approaches could result in a situation long recognized as desirable in foreign language teaching methodology: namely, initial teaching of reading in language patterns which are already a part of the pupils' aural/oral speech repertory. The foreign language methodology referred to here is commonly known as the aural/oral method of teaching foreign languages.

At the same time, neither of the methods advocated are likely to be successful or to be adapted. The printing of texts in a vernacular speech variety, while technically possible, is as aforementioned, a sociolinguistic contradiction which is rejected by the black speech community just as it would most likely be by any other. The extended drilling of standard English speech and sound patterns as prerequisite for the introduction of reading runs into motivational problems, as well as the questionable validity of postponing reading instruction until standard English proficiency is achieved.

A semiforeign language approach to reading is suggested which avoids the extremes of the two approaches referred to previously but which retains some essential features of methodology of teaching reading as advocated by many foreign language teaching specialists. The important features of foreign language teaching methodology, to be applied to the teaching of reading to vernacular black English speakers, are these: 1) in initial reading instruction students must be drilled in the regular sound-symbol relations and spelling patterns of the language with some vocabulary control, 2) in initial reading instruction students should be exposed only to language patterns over which they already have aural/oral control, and 3) some of the reading materials are part of the pupils' active language experiences.

In the foreign languages most commonly taught in the United States (Spanish, French, German, Italian, and Russian), the regularity of sound-symbol relationship is probably more obvious than in English. Therefore, the teaching of regular sound-symbol patterns is generally taken for granted. Here are some recommended exercises from a 1964 publication of the American Association of Teachers of French (*1*) dealing with the teaching of reading at the Elementary school level:

1. Pronounce a pair of words. Ask the pupil to tell
   a) Whether the words sound alike at the beginning (initial consonant), at the end (final consonant), in the middle (medial consonant).
   b) Whether the words rhyme.
   c) Whether the words have the same number of parts (syllables) or how many syllables there are.
   d) Where the accent falls.
2. Give the pupil an assortment of pictures. Say one word (*maman*). Ask the pupil to select the picture of pictures whose names:
   a) Begin with the same sound as *maman*.
   b) Rhyme with *maman*.
   c) Have the same number of parts as *maman*.
3. Pronounce three words, two of which contain the same phonemes. Ask the pupil to select the two that contain the phoneme in question.
4. Give two or three words that contain the same phoneme. Ask the pupil to add to the list.
5. Substitute words containing a given phoneme in a pattern sentence.

Regarding vocabulary control based on regular spelling patterns, Finocchiaro and Bonomo (*13*) state that:

> Using high frequency words with which the students are familiar, you will teach the graphemes, the written symbols which correspond to each sound in the language. This knowledge is built up systematically but gradually from the simpler to the more complex.

Chall (*7*: 131) has found that such code-emphasis methods are successful with low-income, largely bidialectal students. She hypothesizes that the cause is economic:

> A code emphasis method, which tends to give early independence in recognizing words would be of particular help to a child who is not surrounded by books and adults who help him read words he cannot figure out for himself. A middle class child has more opportunity to "discover" what reading is all about—particularly the letter-to-sound relationships—even if the method used in his school does not go about teaching the code systematically.

Hoover, Politzer, and Brown (*20*) and Skailand (*33*) have done preliminary studies which also show some support for a spelling pattern approach as one of the more successful methods of teaching bidialectal children.

Such approaches to reading are used in many of the successful bidialectal schools. "Black Schools that Work" (*5*) contains a description of not only black but other bidialectal schools using these methods, including a predominantly Puerto Rican school in New York City. Other studies also show these approaches to be used successfully in bidialectal schools (*32*).

The emphasis on the establishment of sound-symbol relations and creation of word analysis skills is obvious. Some readers will ask: Isn't it precisely the lack of fit of vernacular black English phonology to the standard English sound-symbol correspondence rules that creates reading problems for black vernacular speakers? The answer: Yes, of course it does, not *only* if teachers utilize the process of teaching reading for the purpose of imposing new and unaccustomed phonological patterns on the speakers of vernacular black English. Vernacular black English phonological patterns tend to create some homonyms not present in other English speech varieties (*four* and *foe*) and some vernacular sound-symbol correspondences are obviously different from the ones likely to be present in the speech of the teacher. But the correspondences of vernacular black English speech to English orthography are just as regular as those of any other English speech variety. One of the advantages of a spelling pattern approach to the teaching of reading to black vernacular speakers may be precisely that the teacher utilizing the approach cannot help but notice the regularity of black vernacular phonology: Whether *light, might, right,* are pronounced /lɑit/ mɑit/ /rɑit/ or /læt/ /mæt/ /ræt/, the regularity of pattern is not affected. And *four, door, more,* rhyme regardless of whether they end in /o/ or in /or/.

Even if the teacher should decide to manipulate the pupil's pronunciation in the process of teaching reading and to drill the pupil (for example, pronouncing *four* as /for/ rather than /fo/), the drill will at least be done in a systematic way, provided the teacher uses a spelling pattern approach. The pupil may become aware of a systematic pronunciation contrast as well as of a spelling pattern and, probably even more importantly, the teacher will realize that black English phonology is systematic and not a series of haphazard "deviations."

Once sound-symbol correspondences are established, the foreign language student is ready to read connected materials, but even at that second stage the students read memorized materials in rearrangements and recombinations. The students may read pattern drills which have been developed from dialogue materials or recombination narratives or conversations (*31*). The essential feature of this approach is, of course, that reading remains tied to the student's active language use and to materials in which the student has a degree of aural/oral proficiency. To postpone the teaching of reading until a speaker of vernacular black English has attained proficiency in something called standard English is ludicrous. To make sure that a pupil has audiolingual control over the specific language patterns he is about to read is a feasible goal that does not require postponement of the teaching of reading. Contrastive oral drills (*3, 22*) could be used in those incidences in which vernacular patterns are markedly different from standard, not to change the pupils' speech but to make them aware of the unfamiliar standard patterns they will encounter in reading. It is interesting to note in this connection that a pattern practice oriented language program designed to improve black students' ability to speak standard English was found to have the unexpected side effect of increasing their reading gains (*23*).

Practice in acquiring standard English/black standard English is done in various ways. In the Woodland School in Kansas City, Missouri, formal drills are performed in conjunction with a spelling pattern approach to reading (*38*). In the Nairobi Day School, East Palo Alto, California (*4*), where the students read two years above grade level, students use a speech pattern approach to reading and informal drill in black standard speech through modeling student speech and oral language. Students are constantly engaged in oral language—poetry reading, dialogues, and choral readings from the works of Paul Lawrence Dunbar, Amiri Baraka, Langston Hughes, and others.

Older bidialectal students as well seem to profit from this combination of approaches. Nairobi College (*9*) utilizes these elements; similar programs are effective with adults in other countries (*15*).

In utilizing pattern drill, however, it is important, to carefully assess the actual speaking habits of the students. Vernacular black English is not a constant. Some individuals possess incomplete control over vernacular black English and standard black English, resulting in the usage of a mix of characteristics (*2*). Others choose to use vernacular features in specified situations. It is important, therefore, to assess the speech of the students before beginning a program. Tests designed to measure student competence in vernacular and standard black English have been developed (*19*).

The deliberate language manipulation involved in oral pattern practice preceding reading instruction in spelling patterns seems, at first glance, to be totally opposed to a language experience approach. Yet all of these methods have been successfully combined and are, in fact, quite compatible (*38*). The teachers are taught to accept the students' speech, and it is written in the form of stories. None of the other successful bidialectal schools use language experience in vernacular black English, perhaps because of the aforementioned sociolinguistic rule prohibiting written vernacular black English. Mitchell-Kernan (*24*) suggests that this prohibition has a historical rationale: dialect in print recalls the caricaturing and exploiting for profit of black English by the minstrel tradition. Most of these achieving schools do stress positive attitudes by the teachers toward vernacular speech, however, one of the most important by-products of the language experience approach.

The writers have mentioned a series of programs sharing what they consider the most important advantages of a semiforeign language approach: the pupils are given a systematic exposure to English orthography; the pupils are asked to read materials over which they have audiolingual control; and the reading materials are part of the pupils' active language experience.

In addition to the methodologies mentioned in this article, there are other factors associated with high reading achievement of bidialectal speakers. Among them are the use of additional parental aid (*36*), use of extra teachers (*41*), administrative organization of the day for more effective teaching (*26*), behavior modification techniques (*38*), political ideology (*25*, *15*), and governance by minorities themselves (*21*).

Recommendations

In order to effectively utilize the methods described, teachers will need additional education. Teacher training programs will need to add courses providing systematic exposure to English orthographic rules in addition to the current curriculum. Recent tests given to teachers through the Stanford Center for Research and Development reveal that many teachers lack such information (*30*). Books and articles such as those by Venezky (*40*) and Chomksy (*8*), serve as excellent sources for training.

Teachers of bidialectal students will also need exposure to characteristics of vernacular English varieties to effectively utilize oral and written language experience approaches. The most salient characteristic of good foreign language teachers is the knowledge of the language to be taught and of the students. Bidialectal parents also support the need for teachers to understand black English though they do not want them to speak it. Good sources listing the characteristics of vernacular language varieties and how these varieties overlap are Bartley and Politzer (*3*) Williams and Wolfram (*42*), and Williamson (*43*).

Teachers of bidialectal students should also be exposed to sociolinguistic information to prevent them from holding attitudes which may have negative effects on pupil achievement. The dialectal situation in this country is serious not because of vast linguistic differences between standard and vernacular varieties but because of the socioeconomic system wnich places bidialectal speakers at the bottom of the economic pyramid. The fact that reading achievement correlates with socioeconomic variables reflects societal attitudes which, when held by teachers, become transformed into self-fulfilling hypotheses concerning the achievement of pupils as was reported by Ford and others (*14*). All must

share a concerted effort to eliminate racism, sexism, and all other prejudices which are based on student social status inferred from dominant speech variety.

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SECTION THREE

Applied Psycholinguistics and Reading

Language Acquisition and Learning to Read

Anne D. Forester
University of British Columbia

Norma I. Mickelson
University of Victoria

Learning to read is a language-learning task and should be seen as such if the underlying process of learning to read is to be understood. Goodman (*9, 10*), Smith (*14*), and Ruddell (*13*) have repeatedly asserted that learning to read is a natural extension of learning to speak. They also believe that learning to read builds on the thought processes and learning strategies that the child has developed in learning his native language. Classroom research (*5, 6, 7*) undertaken by the authors, and described here, not only confirms these observations but suggests that close parallels exist between the learning strategies used for the acquisition of language and the acquisition of reading. The research also demonstrates that children apply these strategies independently if they are given the freedom to do so in the classroom. Results of building on the natural learning strategies of the child in learning to read have been positive.

Language Acquisition Before School

The first day of school is by no means the first day of learning for children. Although they generally have no formal lessons, children become learners from birth. By the time they reach school they have acquired a host of behaviours. They also have learned to speak a language—a complex and difficult task. Children succeed in this endeavor without special lessons about grammar or rules of letter-sound correspondences. They learn by listening to the language around them and evolve their own rules inductively and intuitively. In fact, children come to school with a well-developed learning style and with conceptual strategies for handling language-learning tasks.

Children's language and cognitive development continue to mature during the early years of school (*2, 3, 12*). Thus, it is reasonable to assume that pupils will continue to apply learning strategies if given the freedom to do so.

Since children show themselves to be effective language-learners, it becomes particularly interesting to teachers of reading to examine the learning strategies which produce positive results and to consider whether they can be fostered in learning to read, a task which involves both thought and language. To this end, a brief survey of the thought and language processes of school-age children are presented here in order to serve as a reference point for the conclusions drawn from the classroom observations.

Children as Learners

In the cognitive area, children are still in the intuitive phase of the preoperational stage at the time they enter school. They still think largely in concrete terms. They have not yet mastered the concept of conservation and they center on one thing at a time. Their logic is inductive and intuitive. They look at an overall picture, note recurring patterns, and formulate concepts on that basis. The integration of the patterns they abstract are likened by Piaget to the biologic process of assimilation and accommodation. The process is not a sequential building up, but a complex integration and synthesis of individual parts.

The learning style of children at this stage is one of observing a whole picture and differentiating some of the component parts. The patterns the children note fit their experience and stage of development. These patterns are global and imprecise at first but are refined as children mature. The gradual development from gross observations to fine discriminations proceeds on the basis of observing models, practicing, and receiving feedback. It is an active process based on the intuitive recognition of patterns rather than the conscious application of specific rules.

Children as Language Learners

Like Piaget, linguists have gained insights into the learning strategies of children by making careful observations of child behaviour. Observers in the homes of infants carefully recorded child responses to learning environment, mother's language, and activities in which the children engaged (*1*). Significant strides in interpreting language-learning strategies were made when observers stopped interpreting children's language in terms of adult grammar and perception and looked instead at children's patterns of behaviour. Instead of studying children's language in terms of adult expectations, the observers interpreted the process as evidenced in the children's *actions*.

It was found that children do not passively receive and imitate the language they hear but actively *select* and *restructure* those parts of speech which have meaning to them. In cognitive development and overall learning style, as well as in the development of language, children take active roles, scanning whole language and abstracting parts, moving from gross processing to fine, from global to specific.

The first pattern children abstract is that of rhythm or intonation. A linguist or careful observer can actually detect the intonation a baby is imitating while still at the babbling stage. The melody of language is the first pattern children use in progressing toward fully developed speech.

Later on, children select from the flow of language those words and sound patterns which have meaning to them: mama, milk, daddy. These words are largely tied to concrete objects and events. At first children's vocabularies consist mostly of nouns, verbs, and some adjectives. The function words are added later. From the outset, however, children understand and convey a great deal of meaning with their limited stores of language.

In the process of learning, children restructure the language they hear into simpler units. They actually devise a grammar of their own, using simple rules which are later elaborated on the basis of models, practice, and feedback. It is important to note that children all over the world use the same basic strategies for dealing with the complexities of language learning (*4*). Children traverse definite stages and, although there is diversity in the length of time children spend at a given level, development moves along similar lines. The quality and amount of language children hear in their homes may influence their linguistic development, but learning strategies do not appear to change.

Children themselves determine the sequence and timing of their progress as they differentiate details from adult speech. It is definitely not a case of passively receiving pieces of a puzzle one at a time and putting each one down according to consciously applied rules. Instead, the process is rather like developing a photograph (8). First the gross outlines of prominent features emerge; then, more and more detail comes into focus.

Parents as Teachers

If children continue to use their own language-learning strategies when they come to school, it becomes necessary to examine the conditions surrounding language learning in the home.

In the home, children are trusted to learn. Normally, no one worries about whether they are going to talk. There is no felt need to provide them with rules and regulations. The amount of language children hear from the beginning is vast and relates directly to their concrete environments. Though parents use a simplified version of their normal patterns of language, they nevertheless use natural language around their children. It is the concrete meaning, as children understand it in the context of daily life, that guides language development, not sounds in isolation. Modeling and feedback of complete units of meaning guide children's learning; they listen to a flow of language, not individual words or sounds.

Individual efforts are accepted positively. There is no criticism of immature language structures. No one asks children to "say it in a complete sentence," for example. It is assumed they are saying more than appears in the surface structure of their simple statements. Parents confirm their children's words through positive feedback, expanding what has just been said. The baby's "allgone milk" may be countered by "that's right, your milk is all gone." The parent's response is addressed to the content rather than the form of the child's statement. Yet, the expanded feedback also provides a model of correct adult sentence structure giving the child the opportunity to evolve language patterns while maturing.

This type of language learning in the home fosters flexibility of learning. Children know that many factors influence the meaning of oral language. The context of everyday settings invites them to create sentences of their own to deal with new situations as they arise. There is an atmosphere of trust and positive regard for their efforts. There is ample opportunity to observe language as a natural means of communication and to select those parts from the whole of language with which the children are ready to deal. Children direct the course of learning themselves, based on the activities and concrete situations in the home. They apply the rules of language which they themselves have abstracted without conscious awareness.

Language Acquisition and Learning to Read

Classroom Environment Compared to the Home

In the classroom, the learning materials presented and the attitudes implicit in a structured curriculum often are diametrically opposed to what occurs at home. One fundamental difference is that at school children are trusted to learn without specific instruction. It is assumed that they must be given rules to allow them to understand and use written language. Instead of a vast flow of natural language, the input is often strictly limited and carefully controlled by the curriculum. Language is dismembered into letters, sounds, and words in isolation. Except for pictures, the examples of written language often seem to be stripped of contextual clues. The focus is on *language qua language* instead of on language embedded in some meaningful activity or context.

Children do not perceive the patterns of sounds and rhythms presented as being regular. In both their oral and written responses there is an insistence upon complete statements, and children are asked to make explicit how they arrive at an answer. The curriculum indicates at what point new material is introduced and children are expected to build skills through step-by-step lessons on the components of written language.

Speech is an intuitive skill in the sense that users of language are not consciously aware of the rules they apply or the component parts of speech they manipulate. Children do not analyze how they are putting together bits of language, just as they do not analyze how they move their legs and feet when they run or skip. Asking them to analyze the component parts of language is akin to asking them to analyze how they flex their knees and move their feet. Both requests are likely to produce stumbling.

In the same way, a structured approach to reading leaves little room for spontaneity. The amount of material is highly limited and often presented without the aid of context or concrete referents. Also, there is little or no fluent reading in class in order to provide a model of normal language intonation. Unless children are read to in their homes, they have no guide to tell them what reading is all about and what it is they are trying to learn to do.

During oral reading in the classroom, individual efforts are corrected as and when needed. Accuracy is stressed and pupils are referred to rules of language to aid them. Even if it is not said in so many words, the message that they are wrong is communicated to the children. By insistence upon one or two means of recognizing written language, children become inflexible in their approaches to understanding written texts; and insistence upon accuracy in reading further curtails children's willingness to test their own learning strategies. The message implicit in such a curriculum is that children's own approaches to learning cannot be trusted. The requirement to have reference-to-rules further undermines children's own intuitive learning strategies in the reading process.

Observing Children as They Learn to Read

In order to test the hypothesis that beginning readers will apply their own language-learning strategies when first learning to read, in this study the linguist's research technique of collecting a corpus of observational data and analyzing it to detect and abstract recurring patterns was used. In fact, a 1974 pilot study (5) was conceived as a replication of the work Brown and Bellugi (*1*) did in the homes of the infants whose language they were studying. In this instance, however, the classroom was visited and interactions between learner and teacher were recorded. What children said and did in response to the lessons and text was analyzed and the data interpreted, not in terms of the usual products of reading—subskills and performance—but in terms of children's language-learning strategies as evidenced in their behaviour.

The study was undertaken in a first-grade classroom at Fairburn Elementary School in Victoria, B. C. Twenty-two children were in regular attendance. The children were accustomed to visitors and paid little attention to the presence of observers and equipment. The teacher took an active interest in the research.

Observations were made over a six-month period. As a rule, the classroom was visited every Monday morning during an hour and a half of language instruction and every Tuesday afternoon during an hour of activity time when children selected activities in the language arts centre. On both days, shorthand notes on important interactions or on the physical setting supplemented the recordings on video and audio tapes. All activities connected with language arts instruction were recorded. Verbatim transcripts of recordings and notes were prepared for analysis. Particular emphasis was placed on deviations from the expected. An adaptation of Goodman's system of marking reading miscues was used to record the children's oral reading.

Four children were signaled out for intensive study. As time permitted, however, responses of the remaining children in the classroom were noted as well. No tests were administered because the focus throughout was on learning *processes* and *strategies*. The levels of performance at given points were not considered of importance.

The patterns of behaviour which emerged revealed that, although the structured lessons focused on letters, sounds, words, and rules of phonics, morphology, or punctuation, the children did not use these individual items as pieces of the puzzle of reading. Instead, they used broader categories, trying to apply strategies which paralleled those evidenced in language learning and cognitive development. Their progress appeared to be based on the practice and feedback which accompanied lessons on phonics and morphology rather than on the conscious application of rules. Descriptions of some of the observed reading behaviours follow. They exemplify the strategies used by children when learning to read and are shown under headings representing the language-learning strategies discussed.

a. Scanning for familiar patterns

During the first few weeks of instruction children scan the entire environment and rely heavily on cues other than letters or words. They observe other children, look at the teacher's behaviour as she cups her lips to enunciate words clearly, and use pictures as guides to meaning. Children search the overall context to help connect symbols with meaning.

Once students have learned a number of sight words, they scan printed texts for familiar words. Their fingers or the movement of the pointer at the blackboard reveals their active search for something familiar. Usually they stop at a familiar noun. Function words seem slow to emerge.

b. Words suggest concrete referents

Children aged five or six do not make a clear distinction between an object and its name. Their responses to questions or reading tasks reflect this lack of separation. Asked if she knew what *cake* looked like, a child replied, "Sure, it's round and has icing on it." A boy circled the letter *J* when asked to circle the beginning letter of the word *sister* (his sister's name was Julie). Similarly, two children searched for an *R* for *rabbit* when *bunny* was the word supplied by the teacher.

c. Meaning takes precedence over sounds or words

No matter what the cue—written, spoken, or pictorial—children tend to focus on meaning more than on sound. In exercises for short vowels, *bug* will be read as *beetle* and *mitt* as *glove* if the pictures suggest that those words fit more closely. Asked, "What rhymes with *good* that animals live in?" the children responded with *zoo* and *cave*; none thought of *wood*. The picture of a hen was identified as *chicken* or *rooster* though it appeared on a word wheel with an *en* ending and the children had just read *ten, pen, men*.

d. From the whole to the parts

Despite the fact that consonants and their sounds were introduced early in the school year and practiced almost daily, children continued to confuse *b* with *d*. They inverted these letters in their writing; and, as late as the end of February, the best reader in the class asked, "Is that a *b* or a *d*?" when trying to fit a vowel between two consonants to make a new word. The same child would read *big* or *dig* without difficulty if the words appeared in context.

The lack of fine discrimination was particularly evidenced in the children's writing. If sentences were incomplete, they were still read to convey the full meaning. "I wear scarf, wear socks, wear mittens," was read, "I weared a scarf. I weared socks. I weared mittens." Similarly, the child's caption, "It have a hat," under his picture of a snowman was read, "The snowman has a hat." Letters were frequently misprinted but were read to fit the word or context. It seems that gross processing of meanings and words precedes fine discrimination of letters. Development moves from the whole to parts, from gross to fine.

e. Language patterns guide the reader

Like infants using the melody of language as their first guide, readers used the intonation patterns to guide their search for meaning. As early as the second week of observation, examples of errors in intonation indicated that the children were using their own patterns of language to aid themselves. "See Lucky." or "Run, Anne." were read as if they were in complete sentences. The children's intonation indicated that they felt something was missing. Their spoken language has no such patterns. When asked to reread a line with more natural intonation, one boy converted "Oh, Janet, look." to "Oh look, Janet."

Slow learners internalized the language patterns of the primer to aid them in recognizing patterns in the printed text. When asked to write sentences on their own, these children would write "Stop Lucky stop." or add "said Janet" to their own sentence "We have a Christmas tree." When answering questions about the text, children responded as though reading "Janet / found / a / book," enunciating each word separately.

Based on the fact that the children were using the language of the primer in their oral and written responses, it appears that they decided that the printed words must be some kind of language which makes sense and has a rhythm of its own. Once they learned "primerese," a number of them made remarkable progress in reading. They appeared to have internalized patterns which aided them in dealing with the text.

f. The induction of rules

The examples cited above suggest that the children used both meaning and the patterns of language to aid themselves in learning to read. Neither one was specifically mentioned by the teacher. On the basis of the observations it was concluded that the children themselves generated two fundamental rules of reading: 1) To read, one looks for meaning and 2) To abstract meaning, one looks for patterns of language.

g. Active involvement

The two important rules the children derived themselves were the result of active involvement with the process of reading. Rules were formulated inductively and applied intuitively, much as rules of syntax were formulated and applied when learning to speak. None of the children stated the rules, but their behaviour clearly demonstrated that they had applied them. The results of learning rules at a conscious level were not the same. The children readily memorized and repeated such teacher-supplied rules as "that word begins with a capital letter because it is at the beginning of a sentence." But they did not apply the rule in their own writing. Instead, they capitalized words important to them such as "Big Brother," "Building Set," and "Holiday."

The use of rhyming words presented a particularly interesting example. Word wheels of the type already mentioned showed fixed endings like *at*, *ug*, or *en*; and, as the child twisted the wheel, new initial consonants and pictures corresponding to the word created came into view. An ever-recurring pattern was to have children read three or four of these rhyming words in succession and then say something quite different in sound, but correct to fit the picture. The sequence might be "ten, pen, men, chicken," or "ten, pen, people," "hat, mat, bat, cat, mouse," or even "R for mouse."

The puzzling aspect of having children say and hear the same sound, without using it as a guide to the next word in sequence, and having the same ending unchanged in front of their eyes, yet saying something quite unlike that ending, may find a partial explanation in the absence of conservation in the child's cognitive repertoire. Flipping a new consonant into place can be likened to putting that ending into a new "container." The child does not focus on the intervening process but on the end result. The new word is a different entity from the one before.

Further, if children center on meaning rather than sound, it is not inconsistent for them to say a word that sounds quite different. They do not decenter from the central aspect of language (meaning; hence, the sound and appearance of these words receive little attention. The list of rhyming words is an adult construct. It is the end result of an abstract reasoning process involving several steps. Children have not traversed these steps or had active involvement in deriving that list. They do not recognize its meaning or utility.

Simple repetition of words or rules is no guarantee that children will internalize them. They have to bring some pattern of their own to the task of learning. During oral reading it was noted that children would ask for the same word several times in succession. On a number of occasions, the children would read familiar words like *want* twice within four or five lines and then ask to have it supplied when it occurred a third time. The word *make* was introduced early in the school year in exercises directing the children to "make six red apples" (draw them). Within the context of those repeated instructions, children read "make" without hesitation. When encountered elsewhere, the word was asked for as though it were unfamiliar.

It might be argued that some of these examples are nothing more than a case of poor memory. Saying a word twice within a matter of seconds, however, and then asking for it when it appears a third time needs a better explanation—perhaps another case of lack of conservation. Words are seen by the child in a container of context—sentences, syntactic structures, exercises. If the container changes, the words look new and different. Children process the flow of language and use familar structures of language to guide them. They are using patterns of language and context cues to meaning. They are not processing words or discrete sounds.

h. Restructuring

Based on a comparison between the lesson plans of the teacher and the behaviour of the children as they progressed side by side in time but not in sequence, it appears that in class, as at home, learners restructure what they hear and see to fit their own levels of development. They select from the overall flow those units which have meaning. In class, children were found to look for whole patterns of language when the teacher was presenting lessons in phonics and morphology. The children used the rhythm of language, their own experiences, concrete images, and patterns of speech to differentiate meaningful parts from the lessons. Their progress moved from gross processing to fine—beginning with whole units, with phrases or words. Fine discrimination of letters evolved after the picture of reading had begun to develop. It progressed on the basis of modeling, practice, and feedback. If teachers modeled fluent reading, the children read the passage with good fluency and intonation. If teachers referred children to rules, progress was slow. The puzzle approach of putting down individual pieces of language on the basis of abstract rules did not show much evidence of aiding the learners. They devised their own rules inductively and intuitively: To read, one looks for meaning; to look for meaning, one uses the patterns of language. Modeling, practice, and feedback helped them to discriminate the fine points of written language after an understanding of the reading process had developed sufficiently to show where the details belonged.

Implications for the Classroom

Since children in this study were found to use their own learning strategies in restructuring lessons, a number of suggestions are presented below based on translating conditions which foster learning in the home into classroom practice. Although these may sound deceptively simple, they are, nevertheless, theoretically based and derive from the child's own learning style. Few of them are novel or untried. Together they provide a unified framework to foster learning. It is well to remember that they do not represent a new teaching technique but a philosophy of aiding learners to use their own natural learning strategies.

Adopting a new philosophy is likely to be a gradual process. By integrating one or more of these suggestions at a time into the present mode of instruction, teachers have the opportunity to observe how learners respond. If the results are good, teachers will feel more at ease with shifting their teaching styles to fit the language-learning philosophy. Children who are reading for meaning and use whole units of meaning to guide themselves are progressing in the right direction. Since they are not focusing on the atoms of language, their achievements on tests in phonics are likely to be low. In this connection it is important to keep two points clearly in mind: 1) The aim of reading instruction is to have children read for meaning and 2) children entering first grade are still in the intuitive phase of the preoperational stage of development. Children are not yet ready to deal meaningfully with abstract lessons about language.

To provide for an easy transition from spoken to written language, learning to read should be integrated into the overall learning situation in class and should be a functional part of other activities. When learning to speak, children draw on the entire context or setting to give meaning to the spoken word. This natural tendency to look for meaning through context needs to be encouraged with beginning readers through such activities as reading stories, noting labels on or under familiar objects, pointing to street signs on field trips, and using illustrations or the context of stories to help the beginner make the connection between the printed symbols and their meanings and sounds.

Meaningful units of written language (sentences, phrases, words) that relate to the situation at hand should be the building blocks of reading. Letters or sounds are not meaningful to children when first beginning to read. Since many children do not have a clear idea of the function or utility of reading, it becomes important to convey to them that reading and written language are meant to make sense. Familiar stories and nursery rhymes read in class and displayed on large wall charts help to make reading both meaningful and pleasurable.

A great variety of reading material is needed to supplement any basal or core reader. Children should be encouraged to bring their own books or to select books from the school library. Magazines, clippings, and large charts of nursery rhymes or the children's own stories are helpful. Freedom in the selection and use of reading materials and practice exercises should be encouraged. Children will regress and advance according to their own needs.

Children should be permitted free access to materials and books for browsing and meandering through the printed page. There should be no pressure applied to "read" or to "choose one book and read it through before choosing another." Only by immersion in the material will children be able to develop their own learning strategies.

As in learning to speak, children will differentiate those parts of language with which they are ready to deal. Their recognition of familiar patterns should be confirmed and unfamiliar parts, supplied. The children should be encouraged to experiment with new patterns, advanced sentence structure, poetry, or whatever appeals to them. At the same time, children who wish to return to the same book or story many times in succession obviously still derive benefit from it. Overlearning the patterns of a favourite story will give such children the confidence to advance.

Since development proceeds from gross processing to fine, the imperfect oral reading of children should be accepted as long as the overall meaning of the passage remains the same. If children read "mother" as "mom" or "little" as "teeny" no correction or comment is needed. Often children will go back to the beginning of a line to get a fresh start. Always keeping in mind that reading for meaning is after all the ultimate aim of reading instruction, it becomes clear that discriminating between individual letters or rules of phonics should not be expected while the child is still trying to grapple with the overall meaning of a passage. Such fine discrimination will follow later. In fact, letter-sound correspondences are best taught, not in conjunction with reading but with writing and spelling where their function and utility are far more readily apparent to a child.

Explicit rules applied externally do not aid the reading process. Children will generate their own rules, much as they did when learning to speak, if given the opportunity. During the course of the classroom research noted in this paper, children were observed to formulate two fundamental rules of reading: 1) to read, one looks for meaning and 2) to find meaning, one uses patterns of language. Classroom teachers have since found that, when asked, the children will actually state that they "look ahead to see what comes next" if they do not immediately recognize a word. According to teacher observations, children's eye spans actually increase once they are no longer asked to focus on letters and their sounds.

The Role of the Teacher

When using the language-learning approach to teaching reading, teachers actively model reading. Teachers read stories to the children while they follow the reading in their own books. Later, teachers pick up a book of their own choice and read it during periods of uninterrupted silent reading. When modeling oral reading, teachers may exaggerate their intonation or dramatize a bit to add some fun and expression. Recordings and visual aids supplement examples of reading behaviour, and more advanced children model reading for the slower learners. Like speaking in the home, reading in class is very much an ongoing process which children perceive as an integral part of everyday occurrences.

To help children gain greater precision and advance to more sophisticated levels of reading, teachers include the use of expanded feedback in their modeling of good oral reading practice. If a child's oral reading of a passage needs correcting, the teacher will say something like "that's fine" and then read the line or passage correctly. Like the parent at home, the teacher thereby acknowledges that the child has been heard and then corrects the imprecise effort without saying "You have made a mistake." Where exact form or verbatim reproduction of the text is stressed, the children soon learn that "what the teacher wants" is form rather than content. Such a message surely is counterproductive to achieving the goal of having children read for meaning.

Finally, the teacher must trust the children to learn. This is the cardinal point of the language-learning philosophy. It is also the most rewarding and is, perhaps, the hardest to adopt. There is an easing of tension for teacher and learner alike which creates the right environment for learning when the children are trusted to develop their own rules. It may help to keep firmly in mind that children, when learning to speak, began with babbling, moved from gross performance to fine, self-corrected along the way—all without special lessons in talking. They succeeded in learning a new language, something few adults manage to do. If they can be trusted to learn to speak, they can also be trusted to learn to read.

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Language Experiences for Teachers[*]

JoEllyn Taylor
Far West Laboratory for Educational Research and Development
San Francisco, California

Vicki Purcell Gates
Barbara Prall
George Prall
Mt. Diablo Unified School District
Concord, California

Applying psycholinguistic principles to the act of reading is now prevalent in the literature and in theoretical discussions of the reading process. This perspective is different from the ones widely applied heretofore; thus significant modifications and different emphases are required to transfer these principles to daily classroom instruction. Some means that have been effective in helping teachers in this procedure are discussed in this article.

Psycholinguistics leads to not so much a new technique for teaching reading as to holistic approach to understanding how the use of written language is acquired, how reading as a language process parallels listening. Teacher education aimed at implementing the concepts of psycholinguistics can model this distinction. Care must be taken that the whole of language is never sacrificed to the parts. To convey meaning—to communicate—is the ultimate purpose of language, written or verbal; and this purpose must be kept uppermost. Just as the listening process is natural, growing from the need and desire to communicate and based on established verbal symbols, so the reading process is similar to communicating with a speaker who is not present and who has transformed the message into visual symbols, equivalent to verbal ones. If the need, desire, or interest is there to understand the message of this absent speaker, readers will decode the symbols just as they do when listening. In fact, beginning readers have an advantage over beginning listeners since, having mastered verbal language to the point of being able to communicate, they are already familiar with language, the symbols (words), and the patterns (syntax) on an empirical level. With motivation and encouragement, the visual version of the familiar symbols are deciphered. It is the role of the teacher to provide the most effective forms of encouragement and guidance.

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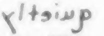
[*] Language Experiences for Teachers

Inservice Education in Psycholinguistics

In order that teachers come to understand the principles, instead of just following various classroom "recipes," sound learning concepts are utilized in conducting the inservice sessions. Education, whether of the adult or the child, is most effective when it utilizes the learner's previous experiences and gives the learner the opportunity to actually experience new concepts. Activities can be designed so that learners are actively involved and can derive their own insights from the experience. With this goal in mind, several experiences are planned for and with teachers to develop understandings about reading as a language process. Only two such experiences are discussed here.

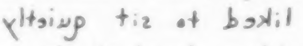
An Experience with Backwards Print

In the first experience, teachers read backwards print, which is an attempt to recapture the challenge of deciphering unfamiliar symbols. A story printed on a transparency is reversed on an overhead projector. First, only an isolated word is projected on the screen by blocking out all else.



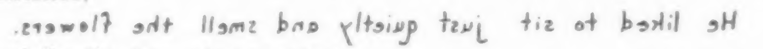
quietly

The group attempts to decode it. Then a phrase is projected.



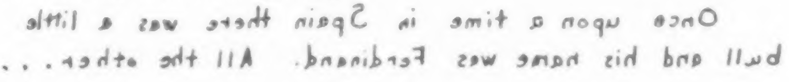
liked to sit quietly

The group finds this easier to decode, and is then given a whole sentence,



He liked to sit just quietly and smell the flowers.

and finally the entire passage:



Once upon a time in Spain there was a little bull and his name was Ferdinand. All the other . . .

When the experience is discussed, participants express different levels of difficulty with the various stages of the task. Trying to decode an isolated word is difficult or at least slow. The addition of a few words helps; and when a whole sentence is used, people are able to read the backwards print quite well. When the entire passage is presented from its beginning, the task is easiest; and those familiar with the particular story, *Ferdinand*, by Munro Leaf, express special delight with the speed and ease they experience once they recognize the text.

They then begin to conjecture why the tasks varied. The isolated word has an insufficient number of familiar cues to do the task with ease or assurance that a guess is correct. The phrase is better, but still leaves doubts and many available options. The complete sentence offers considerably more information to one who already speaks the language and, therefore, has intuitive knowledge about the structure of the language. Decoding even a few words narrows the options considerably for the surrounding words, thus aiding prediction. The complete sentence reads as follows: *He liked to sit just quietly and smell the flowers.*

The word *He* implies a verb will follow (*liked*), which implies an infinitive will follow (*to sit*). *Just* opens the potential that an adverb might follow (*quietly*); *and* implies another verb (*smell*); and *smell* implies an object.

In addition to language cues, other cues are available to the reader who has life experience related to the subject matter. The possibility of an adverb following *to sit just* is narrowed by a number of adverbs that would make sense as descriptors of ways to sit. *Silently, comfortably, briefly* make sense; but *rapidly, noisily, darkly* do not. Also, one who has experience with the concept *smell*, immediately limits the potential objects of *smell* to those things that have an aroma, so the number of objects is immediately reduced from an infinite number. Additionally, teachers discover that once one narrows the possibility of the next word to that of being an object of something to *smell*, and then notices the initial *fl* the *er*, or any other portion of *flower*, one can further eliminate the many additional items that one can smell.

Since this information is processed much more rapidly than the time consumed in describing it, it happens too quickly to be able to determine the order or weighting of the different cues in any one situation. The participants do, however, observe how the many cues constantly and accumulatively reduce the infinite alternatives and thus increase efficiency at selecting a reasonable, workable option.

When participants discuss the experience of reading the complete passage, they see that more information becomes increasingly valuable. If one is familiar with bullfighting, it is not surprising to find Spain in the setting. When one is familiar with typical expectations of bull behavior, and the story implies a typical behavior, it is natural to accept opposite descriptors. Even the story format is predictable when presented in total. *Once upon a time* easily tumbles forth with just the initial word (*Once*) and a glance toward *upon*.

Persons familiar with the exact story report considerable ease with the reading immediately after learning the character and setting of the story, while others need more input. Even they, however, find that by the middle and especially the latter sections the words are becoming so predictable that reading begins to flow, despite the backwards printed words.

Such a discussion leads to a conclusion that the reading of *Ferdinand* is made possible by three different kinds of information: symbolic (the print on the page), semantic (the meaning behind those grouped symbols, words), and syntactic (the order in which those words occur). When all of that information is familiar and offered *simultaneously*, effective reading occurs easily.

A significant statement about the reading process can be generated: *whole language which states familiar ideas allows the reading process to occur naturally and efficiently for the speakers of that language*. What implications does this conclusion have for teachers of reading?

1. *Present the reader with whole language*. Wholeness here refers to total units, such as an entire story, song, poem, chapter, or episode; that is, every word to be read is housed within a complete context. To have less than all three kinds of information (symbolic, semantic, syntactic) hinders efficient processing and may even prevent effective results.

   Two other principles further refine the first:
2. *Insure that the reader is familiar with the concepts presented in the text*. Students need to bring prior knowledge and interest to the subject matter of the printed text. They can be involved in the selection of reading materials, or they can create their own material by dictation.

   Discussion, including predictions about the story, can also be used to surface the reader's background just prior to meeting those concepts in print, not to feed any new information the story has to offer but merely to act as a warm-up process whereby the reader becomes reacquainted and ready for this topic.

3. *Insure that the reader is familiar with the language in which the story is expressed.* The sentence structures need to be ones that the reading student either utters himself or at least hears from others and comprehends. Any structures too complex for him to understand orally, are inappropriate as reading material. Familiarity with the reader's spoken language is required and again there is reason for the use of text dictated by the reader himself.

The backward print experience does lead to certain implications for reading teachers, as just described. However, the teacher needs further information for guiding the reading experience.

Experience in Listening to Readers

To this end, a second teacher experience has to do with listening in a new way to someone else read, especially someone just beginning to learn to read or having difficulties. Teachers record students' unassisted reading of a whole unit (story, chapter) followed by their retelling of the story in their own words (*3*). Repeated experiences of this sort help to indicate what strategies are necessary for effective reading and how the teacher can facilitate them. Teachers begin to hear what readers do naturally to gain meaning from print when relying on their own problem-solving abilities. One such strategy, self-correcting, is observed when a student sees *I was going to go home* and begins by reading "I say," which is a natural structure, but then sees the word *going* and regresses to *I* and corrects to "I *was* going to go home."

Another strategy is to substitute a synonymous word. The text reads, *Jerry saw Father come in the door.* The student reads, "Jerry saw Daddy come in the door."

Yet another effective strategy is to substitute or unobtrusively skip the word temporarily and return to it or correct it when more information is in. The text reads, *Whenever I pass the orphan home, I remember a boy named Ted. In the Orphan Home lived boys and girls who had no mothers and fathers. Ted was a boy raised in the Orphan Home....*

When one reader first encountered the term *orphan*, she pronounced it "orpan" and repeated this substitution the second time as well. Before encountering the word the third time, the term had been defined, so the reader automatically supplied the correct pronunciation.

Effective readers will completely skip an unknown word when it is obvious that it is not important to the message of the author. They will also delete words that are not essential to meaning: *After a while he*...(*a* was deleted). On the other hand, readers insert words to make the language more natural:

that
I knew he was there.

When a completely unknown term such as a name or foreign word is encountered, another strategy is to supply a place holder, acknowledging that pronunciation may be incorrect but knowing it does not affect comprehension. The text reads, *We met Gisela and Werner at the airport.* An English-speaking student might read, "We met Giselle and Warren at the airport."

Competent readers naturally perform and are barely aware of all of these strategies. By listening to several readers, teachers discover the effectiveness of the strategies, in contrast to strategies of making poor substitutions or ones that obstruct the flow of meaning and thus result in loss of comprehension. Teachers hear readers who, in spite of many miscues, are able to retell a story accurately. Teachers learn which reading behaviors are most important for obtaining meaning and becoming efficient. In addition to enforcing the generalizations formulated out of the first adult experience, the teachers discover and discuss this refinement and addition.

4. *Encourage readers to make deviations from the printed text when it is believed that understanding will be enhanced by so doing.* The reader needs to realize that reading like all language processes is not an exact process. It is an approximate and selective process, where words carry unequal amounts of information and not all words are needed to understand. Deviations (sometimes termed miscues) such as substitutions, deletions, insertions, and corrections are promoted as long as the reader retains meaning and produces structures that sound like language.

   Application in the classroom is evidence of the effectiveness of such activities.

Classroom Applications of Psycholinguistics

Adult activities as just described (backward reading and listening to a reader) involve teachers in making discoveries about the reading process. It takes many such experiences and direct work with students to build a working understanding of how reading takes place. This working understanding seems to be based on the gradual acquisition of two basic assumptions: 1) students can be trusted to possess and use valuable assets needed for learning to read and 2) reading is not an exact process. Once teachers experience verifications of these notions, they often become sufficiently motivated to modify, improvise, and create new classroom reading experiences that are more natural, enjoyable, and meaningful for their students.

Perhaps the most powerful influence resulting from this approach is classroom attitude. When teachers realize that reading is not an exact process, they show an acceptance toward inexactness. Students become more relaxed and allow themselves to take risks, thereby developing their own strategies. When the teacher keeps the focus on meaning, students begin to demand meaning for themselves and make their own corrections when what they read fails to make sense. When the emphasis is on the content of the material, the whole is not sacrificed to any part. Another aspect of this classroom attitude or climate has to do with the relationship of all the language arts. The teacher fosters a high degree of verbal interaction, which serves to add to the reservoir for subsequent reading and writing of the language. In other words, reading is regarded as another aspect of language development; and a deliberate attempt is made to maintain an accepting, nonthreatening, asset-oriented atmosphere.

Teachers translate these insights into their teaching in numerous ways and at different rates. Individual teachers may begin with the physical organization, with selection of materials, with student activities, or with various combinations as needs arise.

Classroom Organization

For some teachers, these applications necessitate slight to extreme reorganization of the physical operation of the classroom. Relaxed interaction and meaningful independent work thrive in a decentralized format with children working in small, conversational groups (four to six children) with open-ended materials readily accessible and inviting. Thus, a teacher is less a director of tasks to be done and more a provider of the environment and stimulus for child-created projects. This role fosters children's reliance on themselves and peers, and the interaction reinforces the learning itself (which constitutes continued deposits in individual "bank accounts" of language, from which reading draws).

Selection of Materials

Teachers implementing these generalizations see the need for a wide variety of visual matter, including nonbook materials. They also see the wisdom of having students assist in the collection to assure match of interests and language predictability. Much attention is given to obtaining familiar stories, even memorized poetry and songs, for the beginning reader. Such materials (always in complete form) are also tape recorded and placed at listening posts for repeated, independent use.

The student's own material (dictated stories) is also regarded as significant reading matter. The teacher can now see the power of the use of this natural language. When reading is defined as an interaction between author and reader, this one piece of content insures a perfect match—the reader and author are the same person! Considerable quantities of student language in print say to the student: Your ideas and your language are acceptable, important, and worthwhile. When students have this confidence and come to find symbols reliable, they find it natural to then read other people's language. Language content the students are accustomed to hearing is needed in this transition.

Content format needs attention, also. As verified easily with students, there tends to be difficulty with hyphenated words, dense print on a page, and narrow columns that produce chopped sentences. From the children's own work, it can be seen that sentences assigned to one line each (rather than continuing into part of the next line) are easier for most children to handle.

Student Activities

The four generalizations cited above serve as criteria for designing activities. Some activities become daily routines, while others are units of work.

In the former category are the important habit forming activities such as daily story reading by an adult, frequent dictation and writing of one's own stories, repeated listening to stories and songs on tapes, journal writing, retelling in one's own words stories read, and uninterrupted silent reading of material of one's own choosing.* Through all of these, children are encouraged to use their own experiences to predict and verify what they are hearing, reading, and saying.

While many teachers have done some or all of these activities, the newly developing rationale adds emphasis and reason for providing prime time and attention for these activities. That is, activities move from being supplementary or Friday free-time activities to being recognized as the heart of reading instruction. The teacher knows that the more children hear and see meaningful language simultaneously, the more likely they are to make their own discoveries about sound-symbol relationships for use in subsequent contexts.

The second category (units of work) includes activities more definitive in terms of visibility and duration. Basically, the teacher is providing experiences which call forth effective reading strategies (reading with a focus, self-correcting, predicting, making meaningful substitutions). Teachers often find students have many ideas of their own to add to these activities a process which serves to strengthen and personalize the reading program.

It takes an array of activities in any given classroom to add up to what is considered a total reading program. It is hoped that reading and writing are integral parts of the day long curriculum and that they are used as vehicles for communication rather than reserved for one time period.

For nonreaders of any age, one would see the following within the total program.

1. Activities that promote understanding of what reading is and how it might be beneficial and enjoyable for each individual:

   Sharing of enjoyable literature. When teachers read to the class, they emphasize the value and enjoyment of the content of the story or poem.

   Taking dictation of the students' own language. Writing down exactly what students say can be used to provide the bridge from oral to written communication. Students then can begin to see the desirability for a written record—for later recall, for long-distance communication, broad-scale communication. They also grasp sound-symbol correspondences as they see their language in print.

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*USSR, a technique designed by Lyman C. Hunt, Jr., University of Vermont.

Self-selected silent reading. There have come to be many versions of Hunt's USSR (uninterrupted sustained silent reading), but the basic idea of experiencing the private act of reading self-selected material regularly for a sustained period is helpful as a nonthreatening, habit-forming activity and also gives an opportunity for learners to develop their own reading strategies since they are totally without help or interruption for a short period of time.

2. Activities that involve pleasant repetition of uninterrupted reading:

Singing, choral reading. Singing or reading of poems, jingles, or other units of language that are highly familiar allows considerable repetition for establishing sound-symbol relationships while maintaining the oral flow of language in a nonthreatening situation. Musical rhythm, of course, is of definite value in helping one to absorb the indefinable feel of any language.

Stories and songs at the listening post. Capturing the preceding activities on tapes and using prerecorded stories and songs can provide further opportunities for repetition of whole, uninterrupted language, and students can satisfy the "read it again" request and benefit from multiple experiences of seeing and hearing language simultaneously.

3. Activities that promote effective independent reading strategies:

Setting a purpose for reading. Basic to any reading activity is setting a focus. For example, students can be helped to use the title and illustrations to predict the story content and bring their own backgrounds to the topic. This occurs in prereading discussion. Reading then verifies, modifies, or discounts the predictions which are subsequently discussed in a postreading discussion.

Retelling exercise. To further emphasize the need to read and listen for understanding, students know prior to an oral or written story that they will be asked to retell it in their own words. This forewarning focuses their attention on the overall meaning of the story and discourages literal memorized exactness, often called for in multiple choice or fill-in-the-blank type comprehension questions. Reading thus becomes a process of integrating another's ideas with one's own.

Use of cloze exercises. In both oral and written form, a version of the cloze procedure (*8*) can promote logical predictions on the part of readers. Deleting every tenth word of a text, or deleting certain types of words or important carriers of information can be used to generate activities to fit individual needs. Insertions are considered acceptable if they retain meaning, regardless of exact similarity to original words.

4. Activities that promote the gradual increasing responsibility and independence of the student.

Reading stories to and phasing out. Part of this process begins with reading stories to students while they watch the text. As students are able, they join in on any familiar parts. Stories with repeated lines or jingles are useful for this activity as is the accumulative plot that is highly predictable (*Henny Penny, House that Jack Built*). With repeated readings and/or increased reader skill, teachers withdraw themselves from the reading act. As readers join in more and more, teachers find it necessary only to aid in getting the story started. (The pre/post focus discussions as discussed here are used as a part of this total model.)

Games and activities which strengthen language knowledge. Games and individual manipulative materials can provide practice and strengthen learning as well. There are some commercial games and others that teachers can devise which encourage prediction. Simple verbal activities can also be used. One such activity is a Round Robin story, where one child starts, gives a sentence or two, and then stops in midsentence. The next child then completes this sentence and continues, an exercise causing children to predict.

Many communication activities are needed, working in concert, to develop effective skills. Only a few could be cited here to represent the use of whole language to acquire as naturally as possible the further skills for using written language. A complete program would appear as a collage of many integrated parts, serving the goal of improved communication.

Conclusion

A written description will always fall short in conveying dynamic human experiences. Actual participation or observation is needed to appreciate the full potential of the teacher experiences described herein. It can be seen, however, that the thrust in the inservice education is toward self-discovery, using past experiences to bridge to new ones and learning by doing and interacting. While the content is completely new to some, many teachers report that these activities merely bear out their basic intuitions and they are reinforced, supported to emphasize or expand present features of their programs. Increased understanding of reading as a language process serves to help teachers develop a sound rationale for that which they already know to be true. Therein lies the heart of effective teaching: "Guiding the learner to the threshold of his own mind."

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Miscue Analysis: Emphasis on Comprehension*

Rudine Sims
University of Massachusetts

While on a consulting visit in the Norfolk, Virginia, schools, I talked with a local reading supervisor who also happened to be a member of Weight Watchers. As we passed by a reading/language arts center, we noticed a large sign above the door which read, "Take Off Lab." The language teacher had chosen a space theme for her classroom in an effort to capture the interests of her pupils. My weight watching friend, however, read the sign this way—"Take Off Flab" and wondered aloud whether the language teacher also was a member of Weight Watchers and whether perhaps, she could find a scale to weigh herself. While we both laughed, we realized how the mistake could have happened. At the time, we were returning from lunch, where we had eaten some delicious high calorie food. Both of us were feeling a little guilty. In addition, there was little difference, visually or phonetically, between the two phrases. My colleague had made a miscue as she read the sign.

Miscue is the phenomenon that occurs when a reader deviates from the expected response; i.e., when a reader produces something other than what is on the printed page. It is called a miscue because it is assumed that the reader has not made a random, careless error, but the response has been "cued" by information available to the reader as a user of language.

For slightly more than a decade, a number of researchers/teachers have been examining oral reading miscues in a series of related studies growing out of a USOE funded study at Wayne State

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*Adapted from *NERA Journal*, Vol. 11, No. 1. New England Reading Association (University of Rhode Island, Kingston, Rhode Island, 1975).

University (*1, 2*). The research has involved readers ranging from first graders to adults. There is now an accumulation of audio tapes of readers of varying proficiency and a vast amount of data gathered from analysis of the miscues of those readers. Out of that data has emerged a still evolving theoretical model of the reading process (*3*). There also is a continuing effort to translate the results of the research into implications and applications for classroom teaching.

One application of the research is the development of a diagnostic tool (*4*) which makes miscue analysis practical for teachers and clinicians as well as researchers. That tool, the Reading Miscue Inventory (RMI), enables teachers to employ the same principles that underlie the Reading Miscue Research studies using a less complex instrument than the taxonomy that is used for the research. Essentially, the RMI analysis asks nine questions about each miscue. Those nine questions represent an attempt to examine how language and thought processes function in the reading act.

The purpose of this paper is not to explain how one does a miscue analysis but to present information about miscue analysis by posing and suggesting answers to three questions:

1. Why Do Readers Make Miscues?

Miscue analysis is based on a theoretical position about the reading process. If one is to understand something about why readers make miscues, one ought first to understand something about that view of the reading process. To state that reading is an active process is to repeat a tired cliche. But there is no clearer way to state a basic truism. Perhaps one way to clarify that point is to refer again to the "Take Off Flab" miscue reported earlier. What my friend saw was only partly what was there and partly what she expected to see. She brought her own meaning and immediate experiences to the reading of the sign. That process of having expectations and making predictions based on those expectations is one of the active aspects of the reading process.

As a further illustration of this theory about what the reading process is like, read aloud this brief passage:

> The boys' arrows were nearly gone so they sat down on the grass and stopped hunting. Over at the edge of the wood they saw Henry making a bow to a small girl who was coming down the road. She had tears in her dress and tears in her eyes. She gave Henry a note which he brought over to the group of young hunters. Read to the boys, it caused great excitement. After a minute, but rapid examination of their weapons they ran down to the valley. Does were

> standing at the edge of the lake, making an excellent target [source unknown].

Most readers make a few miscues in that passage and find themselves slowing down and paying extremely close attention to the contextual clues available. The paragraph was deliberately created, of course, to set up wrong predictions and to cause a reader to consciously confirm those predictions before continuing. Frequently, readers are forced to regress, in order to correct themselves, or to consciously read ahead before deciding how to read "tears" or "minute." There are a number of points which might be made here; but the basic point is that, for all readers, the reading process involves making predictions, confirming those predictions based on whether what one is reading sounds right and makes sense, and comprehending or integrating meaning—getting some message from the material. Every reader brings to the process two things which one can label thought and language. That is, readers bring their own ideas, concepts, past experiences, and knowledge of their language and how it works. The process is complicated by the fact that the person who produced the written material with which the readers are interacting also has unique sets of thought and language. Readers cannot exactly match the author; they can only come close. The farther the author's language and experiences are from the readers', the more difficulty readers are likely to have reconstructing an author's message.

Reading, then, involves predicting, confirming, comprehending. It is not an exact process. There are times when predictions are not accurate, just as the local TV weatherperson (with all the scientific data available from the United States Weather Service) makes wrong predictions. When readers' predictions cause them to deviate from expected responses, they have made miscues. Miscues are a natural part of the reading process and are produced by all readers, even proficient ones. It becomes interesting and informative, then, to examine miscues, not always as evidence of reading problems but as reflections of the strategies readers employ as they read aloud.

2. What Can We Learn from Examining Miscues?

Comprehending Behavior

One of the first things one discovers when examining miscues is that miscues provide evidence of the comprehending behavior that occurs throughout the reading process. In reading, comprehension is not solely what takes place *after* one has "read." In oral reading, in fact, comprehending frequently appears to take place *before* one utters the words aloud. For example, in the passage about the boys hunting, one has to understand what *t-e-a-r-s* means *before* one can pronounce it accurately.

Throughout oral reading, most readers provide some evidence of comprehending. First, there is the obvious—reading with acceptable English intonation. Intonation also gives a clue to reader understanding or interpretation of phrase structure and grammatical relationships. Readers' renditions of the ambiguous sentence ("They were *eating* apples" or "They were eating *apples*") show their understanding of that sentence.

Second, given the opportunity, most readers will correct many of their own miscues. Proficient readers correct only those miscues which disrupt meaning or are unacceptable semantically ("She had tears [rhyme with beers] in her dress") or which are unacceptable syntactically ("Does [rhyme with was] were standing at the edge of the lake.") Readers tend *not* to correct miscues which sound like language and which make sense ("This is the book that I gave you" for "This is the book I gave you").

A third kind of evidence of comprehending behavior comes from an examination of the quality of the miscues. When teachers or researchers ask not only "What caused the miscue?" but "What did the miscue cause?" they can quickly ascertain that some miscues are better than others. An examination of some miscues made while reading the word *contented* in one story is illustrative.

The stonecutter was once again *contented.*

1. The stonecutter was once again *con'tent.*
2. The stonecutter was once again *conted.*
3. The stonecutter was once again *continent.*
4. The stonecutter was once again *satisfied.*

It is apparent that all miscues are not created equal. In the illustration, the miscue that looked least like the expected response was the one which came closest to retaining the original meaning and, therefore, the one of highest quality. The quality of a miscue can be thought of in terms of its potential disruption of meaning. The closer the miscue comes to retaining the intended meaning, the better the miscue. Proficient readers, then, tend to make higher quality miscues than ineffective readers. High quality miscues can be considered evidence of comprehending behavior. The numerous readers who read *headlights* for *headlamps* in a story by a British author surely can be considered to have produced evidence of comprehension rather than to have revealed a reading or perceptual problem.

Miscue Quantity

Discussions of quality frequently lead to discussions of quantity. Miscue quantity, it appears, does not tell as much about comprehending as has been traditionally thought. It appears that for any one reader, miscue quantity may be an indication of difficulty. That is, if a reader makes many more miscues on one selection than on another, it is likely that the selection on which the greater number of miscues occurred was the more difficult one for that reader.

However, across readers, miscues quantity can be a poor indication of comprehension. That is, a reader may make many miscues and still supply evidence of comprehending. It may be that such a reader makes high quality miscues or that the reader makes many silent or overt corrections. But the point is that counting miscues will not provide as much information as one might expect—it will not give a reading level. There is some evidence (5) that counting miscues in different portions of the passage may provide different pictures of the same reader.

Language Knowledge

Reading is, of course, a language process; and as has been pointed out, readers use their knowledge of language to help themselves in their reading. Readers' miscues can provide information about the effectiveness of their use of language cues.

As a further illustration, try to read another passage.

> The Ackles Broch Quassed
>
> Gimp and Moopy were ackles. One trafen Gimp and Moopy were broching quassed. Moopy poated one of Gimp's frapers because il couldn't scrop ils. Gimp powed, "Comp ap my fraper!" But Moopy wouldn't comp ho to ilt. So Gimp sworched Moopy, and the ackles conbreted to squit. Then, Armp deperted into the slep. Il taupled both of the ackles, and luped em off to edsen.

Most readers will be able to identify the nouns, verbs, adjectives, and other parts of speech in that passage. They recognize such words because of the inflectional endings and their positions in sentences. Most readers also can answer questions about the story: What were Gimp and Moopy doing one trafen? What happened to one of Gimp's frapers? What did Gimp do to Moopy? Why? What happened to Gimp and Moopy after they conbreted to squit?

The reason proficient readers are able to handle the passage, in spite of the nonsense, is that it contains a number of language cues. Proficient readers are adept enough at using cues to be able to make up a meaningful story to substitute for this one. Specifically, they can employ their knowledge of the grammar of their language to make assumptions about the kinds of words that fit into certain slots, about such meanings as who was acting and who was being acted upon, and about the sequence of events. Readers' miscues will frequently show how effectively readers use that knowledge. When they substitute nouns in noun slots, or predict alternate grammatical possibilities, they do so because they have a sense of what fits. There is evidence that even beginning readers use this language sense in their reading (*6*).

Further evidence of readers' use of their language sense appears when the dialect of the readers differs from that which the author uses in the material. In such instances, readers frequently translate to their own language patterns (*switched off the headlights* for *switched off the headlamps, do it quickly* for *do it quick*, or *there was three boys* for *there were three boys*). Such miscues are indications that readers understood the meaning of the passage but chose to render it orally in their own familiar language forms. These are high quality miscues and are more evidence of comprehending behavior.

The other aspect of language use that one looks at when examining miscues is readers' use of their knowledge of the graphophonic system of their language. How much does the miscue look like the expected response and how much does it sound like the expected response? As a general rule, the pattern is that, on a scale from "very much" to "not at all," a slightly higher percentage of miscues *looks* like the expected response that *sounds* like it. But the evidence is overwhelming that readers do make extensive use of their knowledge of sound-graphic relationships in their reading. Proficient readers, however, always use that knowledge in connection with their sense of what sounds right and what makes sense in that context. That is, as readers grow in proficiency, they will more frequently make miscues that make sense and fit in the grammatical context and may look and sound only somewhat like the expected response. Interestingly, it is when such readers have no semantic support, that is when they have no idea what might fit, that they rely exclusively on sounding out new words. And in those cases they frequently produce nonsense words which look and sound much like the expected response, but which, of course, are not meaningful.

Reading Strategies

Miscue analysis is an attempt to find out what strategies readers appear to be using by asking a series of questions about each miscue made during oral reading. The questions are based on the view of the reading process presented above. It is assumed that miscues are caused, that they don't just happen, and that some miscues cause more damage than others. Rather than present the exact questions used in a formal miscue analysis, the writer suggests some questions which can be asked about the miscues of any readers. The questions are based on the Reading Miscue Inventory and will elicit the same kind of information as a formal analysis. While the examples include a number of different miscues, the point is to ask all of the questions about *each* miscue. (Examples 1-4 illustrate *yes* answers.)

1. Does the miscue look and/or sound like the expected response?
   horses
   (These he made into blocks for building houses and roads.)
2. Does the miscue make any sense at all in its sentence?
   Does the sentence make sense up to and including the miscue?
   him
   (Servants were holding over his head the turquoise sunshade.)
3. Does the miscue fit grammatically? Does the sentence make a grammatical fit up to and including the miscue?
   were
   (Now inside the mountain where the stonecutter was working.)
4. Has the miscue been influenced by the dialect of the reader? Has the reader said something that is correct in his own dialect?
   was
   (There were three boys.)
5. Was the miscue corrected?

6. How much meaning change has been caused by the miscue? When you read the sentence with the miscue(s) in it, how close does it come to the original meaning?
   comfortable
   (He was sitting comfortably in the carriage.)

Asking and answering those questions about readers' miscues will enable a teacher to begin to understand the strengths and weaknesses of the readers. That understanding will enable the teacher to help readers build on their strengths to overcome their weaknesses.

Postreading Measure of Comprehension

Up to this point, this discussion has concerned the comprehending behavior that occurs throughout the reading process. This information is gathered by recording both on tape and on paper the miscues that a reader makes while reading a passage orally and then comparing those miscues with the expected responses by answering a series of questions about each miscue. In addition to that information, it is profitable to look at a kind of postreading measure of comprehension. Following the reading of a selection, readers are asked to retell the story (to tell everything they can remember about the story). Such uninterrupted retelling can give a teacher much information about what messages the reader found in the story. The open-ended task places responsibility for the initiative on the reader and does not involve a present series of questions. Retellings often reveal reader concepts or misconceptions and provide information that would never be apparent if the reader were asked only previously prepared questions. The initial uninterrupted retelling is supplemented by further questioning of the reader. The teacher tries to expand on the retelling by asking open-ended questions that provide no information that the reader has not already mentioned. The questions are designed to reveal the reader's understanding of the story line, theme, characterization, and plot (concern with what is sometimes referred to as high level comprehension as well as simple recall). The combination of the miscue analysis and the retelling are powerful instruments for providing evidence of the comprehending behavior that occurs throughout the reading act and serve as well as a postreading measure of comprehension.

3. What Are Some Implications of Miscue Analysis for Reading Teachers?

Teachers who are introduced to miscue analysis as a diagnostic tool frequently are concerned about the amount of time required to properly use the tool; they recognize that they are quite unlikely to analyze the reading of all their pupils and wonder whether miscue analysis has relevance. One of the answers is that, once having completed a few analyses, a teacher is able to view the reading of all pupils in a different light. That teacher begins to show a greater concern with the quality of reader miscues and a greater awareness of reader strengths.

Conclusion

This presentation concludes with some food for thought and a few practical suggestions.

1. *Begin viewing reading as an integrated process.*

Understand that readers need practice *reading.* In Norfolk, some reading teachers were rehearsing a skit which revolved around an analogy comparing learning to read with learning to drive.

In the skit, a driving teacher and one student were parallel to a reading teacher and another student on opposing sides of the stage. The driving teacher began by showing her student how to place the key in the ignition and asking the student to practice twenty times. The reading teacher began by showing her student that *b* says *buh* and having the student practice twenty times. The driving teacher's lesson for the following day was on using the gear shift lever—moving it from Park to Reverse to Neutral to Drive to Low twenty times. The reading student was learning to say *a, e, i, o , u.* Next, the driving teacher gave a lesson on using the rearview mirror to practice looking; and she proceeded with lessons on using the sideview mirror and turning the steering wheel—each lesson paralleling a similar one given by the reading teacher. The scene then changed to a later time, and the driving student appeared on stage wearing bandages and using crutches. It seems that when the student finally tried to drive, she became so involved with *one* of her skills that she did not pay attention to the task of *driving.*

Drivers will recognize that while it is surely necessary to know how to steer and how to shift gears and how to use the mirrors, those skills are only viable when they are used in the context of driving. The trick is to know which skills to use, when to use them, and, most importantly, how to use all of them *in the process* of driving.

The same concept applies in reading. It may well be important to know that the letter *b* frequently represents the sound at the beginning of *baby*, but it is more important that the reader use that knowledge in the context of the reading act rather than in isolated practice exercises and, further, that he *learn* them in the context of the reading act.

2. *Build on the language and experience of readers.*

Helping children learn involves helping them use what they already know—their language and the meanings they have learned from their experiences. They should be allowed to use that knowledge, for example, without being corrected when they make miscues. They should be encouraged to correct themselves, asking whether what they have read sounds like language and whether it makes sense. Readers should be encouraged to make guesses—intelligent guesses (What might fit? What would sound right and make sense in that slot?) Their ability to deal with material that is within the range of their language and experience should be trusted. Reading is not an exact process. The goal is *not* accurate pronunciation of every word but reconstruction of a message encoded in written form—comprehension, if you will.

3. *Focus instruction on helping readers find out how they can help themselves when no one else is around.*

What, for instance, do proficient readers do when they come to unfamiliar Russian names in *War and Peace*? What do they do when they read foreign words and phrases? How do they enjoy Robert Burns' poetry? How does a proficient reader interpret long, involved complex sentences? Readers need to learn what kind of help is available to them when they are alone with their written material. They even need to learn under what circumstances it is no longer feasible to continue.

4. *Relax.*

Keep in mind that without formal training children learn to talk—a fantastically complex task! The advantages good teachers can provide for aspiring readers when help is needed is immeasurable. The quality of that help is important. A teacher's role is not so much that of *teaching* children to read as of helping them *learn* to read. It well may be that aspiring readers need less training in skills and more practice in reading meaningful material, aided by a teacher who listens well enough to hear and understand the *real* questions asked.

5. *Begin mentally separating reading and reading instruction.*

Reading is interaction between the reader and the printed material. Actually, reading is not a group activity. Reading instruction *can* be a group activity. Often, in the zeal for *teaching* reading one sometimes does not allot time for reading—uninterrupted reading of whole selections. The actual practice in reading is the most important part of helping children learn to read. Classrooms should house a large variety of reading materials, readily available to all students. It is difficult to motivate practice in reading in classrooms offering few materials the children consider worthy of reading. In addition, reading needs to be meaningful. From the beginning, reading must be a comprehension centered activity. One does not read *reading*. One reads for a purpose—for information or for pleasure. Making classrooms places where children need and want to read in order to achieve their own goals, will help eliminate some of the problems of reading instruction.

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Language and Reading

Carol Chomsky
Harvard Graduate School

I would like to discuss two themes in recent language research that have relevance for reading and learning to read. One is the nature of language development in young children. Of primary significance are the active role that children play in learning language and the importance of a linguistically rich environment. It seems to me that reading instruction that takes these factors into account can capitalize on them in interesting ways. The other theme is the basis of the English writing system and its relation to spoken language. Although the writing system does not record pronunciation directly, it is closely related to it within the sound structure of the language. Understanding the nature of this relation is central to understanding what is involved in learning to read, and to appreciating the role that knowing the language plays in learning to read.

Language learning in children is a process of active construction. What children hear in the environment are sentences, but what they learn are not the sentences themselves. Rather, children acquire the means for making sentences by constructing a rule system that enables them to produce and understand new sentences that have never been uttered before.

It is interesting that a language is not the collection of all sentences that have ever been used by its speakers. A language includes as well all sentences that might be used, in fact an infinite number of possible sentences. It is because one has mastered the rule system by which sentences are constructed that one can deal with new sentences never heard before and outside one's own experience.

Although the number of possible sentences is infinite, clearly not all sequences of words are English sentences. Some word strings are grammatical, i.e., within the language system, and some are not. Speakers can intuitively judge whether a new string of words belongs to their language, and this ability is part of what it means to know a language. Knowing English, we can do this for any string of words that one might care to devise. For example, consider some sentences never encountered before:

(a) I saw a fragile hippopotamus.
(b) Hippopotamus fragile a saw I.
(c) I saw a fragile of.

Sentence (a) is immediately recognizable as an English sentence, whereas (b) and (c) are not. Although they have had no past experience with these sentences, all speakers make the same judgments about them.

This ability to distinguish sentences from nonsentences derives from one's implicit knowledge of the rules of sentence construction, or the grammar of one's language. Speakers base their language use on such an internalized grammar. What children have to learn in acquiring language is this implicit system of rules.

No one teaches children this system of rules; indeed, speakers are not at all aware of them as they use language. Even upon reflection, one does not learn much about what the rules are like. They are implicit rather than explicit. Nevertheless, children construct their own set, based on the language they hear in their environment. Children's rule systems end up matching the systems of those around them.

It is apparent that, right from the start, children use language according to rule and with innovation. Even a child's first two-word sentences combine words in ways that are not reductions of adult sentences previously heard. Sentences are created on the spot. For example, common early sentences used by young children are of the type *all gone juice* and *all gone milk*. These sentences are very likely ones that the children have heard, but the children go on to produce others they have not heard. A child whose hands were washed commented, "All gone sticky." A child looking out the front door of his house said, when someone closed the door, "All gone outside." These children had formulated a grammatical rule from sentences they had heard, and they were using the rule to produce sentences of their own invention.

As longer sentences are constructed, this creative aspect of children's language continues to appear. Sentences are produced for which there are no models in adult speech. Early negatives, for example, are created similarly by all children although they never hear in their environments the forms they produce. Typical early negatives are *no Mommy go, no want truck, take it no.* The rule appears to be: attach a *no* either before or after the utterance. Several months later the negative is inserted inside the sentence, *Mommy no go, he not come,* but still without the necessary auxiliary verb *do.* Finally, when auxiliary verbs enter the child's system, the negative is attached properly to the *do* form: *don't want truck, Mommy doesn't go.*

The remarkable thing is children's uniformity in creating these forms. They do not hear them, yet apparently all children use them in the course of acquiring the negative in English.

At age three, children frequently overuse the rule for forming the past tense of verbs. "Allison drinked it, but she hated it, but she drinked it anyway." And a three-year-old girl, on discovering a dead fly in a flower pot, asked, "Mommy, what's that?" Her mother replied, "That's a dead fly, honey." To which the child responded, "Who deaded it?" These children had formulated a rule for forming past tenses and were using it productively throughout.

Children have a great need to be productive with forms they are trying out. Once a grammatical device is picked up and put to use, there is a real drive to use it wherever possible. One morning in nursery school a three and one-half-year-old child was experimenting with the negative prefix *un-*. After building an intricate block structure and then taking it apart at pickup time, he announced, "First we builded a boat and then we unbuilded it." Later on that same morning, he sat preparing to do a jigsaw puzzle. Some of the pieces had to be pulled apart before he could start and, as he separated them, he said: "I have to get all these pieces untogether."

Children continue with their noticeable innovations well into the school years, although the range of "errors" is reduced as the adult system is more closely approximated.

One morning a six-year-old watched his father lower a bird feeder in the backyard in an attempt to keep it free of squirrels. The squirrels got to it anyway during the day. When the father returned home that evening, the child greeted him with, "Daddy, you'll have to go out and higher the bird feeder again. It didn't work."

And a seven-year-old, when asked, "Would you rather play Scrabble or Monopoly?" answered, "I'd rathest not play anything at all." The child admitted upon questioning afterwards that he didn't really think there was such a word as *rathest* but he was convinced there ought to be. He appears to have logic on his side.

Children appear to have a built-in language ability that enables them to organize the variety of linguistic inputs that come their way and to develop a rule system that accounts for what they hear. They form hypotheses about what the rules might be like and test them out by putting them to use. This process of hypothesis formation and testing appears to be a critical aspect of language learning. Tentative rules are formulated, tried out, and adjusted as more and more inputs are available from the environment.

The interim formulation of rules is apparent from many different kinds of errors that occur in the child's speech. Take the five-year-old who commented, "Me and Rachel want a drink, don't I?" Forming tag questions, or placing that short phrase at the end of a sentence to turn it into a question, follows specific rules. In this case, the child used the tag *don't I?* instead of the required *don't we?* What went wrong? The rule requires finding the subject of the sentence and replacing it with the corresponding pronoun. *John and Bill* ate, didn't *they*? *John* sat down, didn't *he*? *Mary* drove, didn't *she*? *You and I* are friends, aren't *we*? The five-year-old knew that the subject had to be replaced with a pronoun but had temporarily erred in formulating some part of this subject-rule, ending with *I* instead of *we*.

The most important part of language learning, then, is nonimitative. Children take an active role, imposing a structure on the data that come their way. They use the environment as a source of raw material from which to construct an underlying linguistic system through a process of hypothesis formation and testing. They need a wide range of language inputs on which to go to work. They revise the rule system as they go along, until eventually it accords with the facts of the language. This ability is natural to the child, and thoroughly easy. It is an impressive intellectual feat, but one which requires no effort or awareness. Children are prepared to do it by virtue of their human language capacity.

It is a property of human beings that language develops through exposure to language in the environment. For normal children, language learning requires no specific instruction. But certainly reading is different. Reading does not develop spontaneously in humans and requires specific instruction. In order to interpret linguistic inputs presented in written form, exposure is not enough. Instruction must accompany the exposure.

What do children need from instruction, and what are they prepared to do for themselves? They are experts at particular kinds of linguistic analysis and rule construction. Is any of this ability relevant to learning to read? The answer to these questions forms the basis of instructional programs and decisions as to what to teach and how to teach it. The mixture of what must be provided and what children are prepared to do for themselves is crucial.

The writer believes that children are prepared to do far more on their own in learning to read than they are usually given credit for. In fact, the writer believes that the major activity in learning to read is assumed by children themselves. One does not teach children how to read any more than one teaches them how to speak. One gives them the tools with which to teach themselves and provides the means for them to learn. As with language in the first place, the actual learning consists of internal organization of the linguistic material on the part of the child. Again it is a matter of rule construction on the basis of evidence from the environment. What instruction has to provide is the background, the requisite information, and an adequate environment for children to undertake the task on their own terms.

The requisite information that children need in order to learn to read clearly depends on the nature of the writing system of their language. English has an alphabetic orthography that relates to the sound structure of the language. The prospective reader will need to know the alphabet and will need help in beginning to relate spellings to the pronounced form of words.

Perhaps the most important fact to be kept in mind in deciding what form initial reading instruction should take is that, in English, spellings do not directly indicate the pronounced form of words. Spelling reflects a more abstract level of linguistic structure than the pronunciation. Spelling is *related* to pronunciation, but it is related to it *indirectly*. Pronunciation can be predicted from spelling, but it requires knowledge of the language to do so. The orthography is a system designed for readers who know the language.

The writing system *leaves out* information about pronunciation that is predictable within the sound structure of English. For example, it doesn't indicate where stress goes in a word, because it is predictable. Consider the word *photograph*, which is stressed on its first syllable: phó -to-graph. When endings are added, the stress shifts to other syllables:

phó to graph	(stress on first syllable)
pho to gráph -ic	(stress on third syllable)
pho tó graph -y	(stress on second syllable)

A speaker of English knows how to change stress appropriately for *photograph*, moving it from the first to the third syllable before *-ic*, and to the second syllable before *-y*. This information is part of the rule system speakers have acquired for their language. It is a general rule of English stress shift and applies to many other words as well. Speakers of the language have learned phonological rules such as these for pronouncing words. Their knowledge of the rules is implicit; that is, they are unable to state what the rules are, although in using the language they follow the rules regularly. Since this information is part of the implicit rule system for pronouncing words, it need not be included in the spelling of those words.

Notice also what happens to the vowels of *photograph* as the stress shifts. Unstressed vowels are reduced to a neutral schwa, again a regular rule of English which speakers follow automatically. Which vowels are reduced depends on stress placement:

photograph	fó tə graef
photography	fə tɔ́ grə f-y

In *photograph* the second vowel is reduced, and in *photography* the first and third vowels are reduced. These are predictable features of the language, and there is no need for the spelling system to indicate them.

Part of knowing a language means knowing the rules of its sound structure. A native speaker of English has an implicit command of these rules, which control the pronunciation of words. Where these automatic rules apply, the spelling system is designed to omit details which are covered by the rules; i.e., the spelling system does not include predictable information about pronunciation. In principle it contains information needed to identify words and omits predictable information about their pronunciation.

If the spelling system were designed to be a phonetic transcription, it would include information such as the preceding about stress placement and vowel reduction. But the system is designed to be supplemented by a reader's knowledge, and it omits redundant information.

To continue with the above example, one may say that *photograph* is spelled according to its abstract underlying form, rather than any pronounced form. There is no spoken version of the word which contains all three vowel sounds: ph*o* - t*o* - gr*a*ph. The actual occurrences of the word in speech always have a reduced vowel, in at least one syllable. In this sense, the spelling doesn't match any actually occurring pronunciation but rather posits an underlying form from which pronunciations are derived by regular phonological processes.

English is rich in automatic pronunciation rules that operate on underlying forms to produce different spoken forms. Many vowel pairs work this way, such as [ey]-[ae] in words like s*a*ne/s*a*nity, n*a*tion/n*a*tional, n*a*ture/n*a*tural, gr*a*de/gr*a*dual, r*a*tio/r*a*tional. These vowels have a single underlying form, and are pronounced differently because of pronunciation rules that apply when suffixes are added to words. The same is true for [i]-[e] in extr*e*me/extr*e*mity, ser*e*ne/ser*e*nity, pl*ea*se/pl*ea*sant, h*ea*l/h*ea*lth; and [ay]-[I] in ch*i*ld/ch*i*ldren, Chr*i*st/Chr*i*stmas, cr*i*me/cr*i*minal; and [o]-[ɔ] in mel*o*dious/mel*o*dic, t*o*ne/t*o*nic, ph*o*ne/ph*o*nic. Many consonant pairs work this way as well: [t]-[š] in dona*t*e/dona*t*ion, rela*t*e/rela*t*ion; [d]-[dž] in gra*d*e/gra*d*ual, resi*d*e/resi*d*ual; [k]-[s] in medi*c*al/medi*c*ine, criti*c*/criti*c*ize; [s]-[z] in *s*ign/ re*s*ign, gymna*s*tics/gymna*s*ium. In each of these cases, there is a single underlying form. And in each case the spelling reflects the underlying form. It is the automatic pronunciation rules that indicate how to shift pronunciation in the different forms in speech.

Thus the English writing system represents a form of words that is abstract within the linguistic system, a level of the sound structure of language that is independent of the particular way that words are pronounced. At this more abstract level, words that are the same are represented the same. At the level of speech they are different. The orthography captures the underlying sameness.

Consider what speakers' built in knowledge tells them about the words of the language. Speakers know, for example, that *nation* and *national* are related words, whereas *nation* and *notion* are not. The pronounced vowel difference in the first pair, [ey]-[ae], does not reflect two separate words, but merely alternate forms of the same word. The pronounced vowel difference in the second pair, [ey]-[o], does reflect two separate words. Because one knows the language, one recognizes this difference in status between the [ey]-[ae] distinction and the [ey]-[o] distinction. One's judgment of "distinct" is based not on phonetic facts but on more complex linguistic considerations.

To take another example. In English there is both a [k] sound and an [s] sound, ordinarily considered to be two separate phonemes. Their occurrence distinguishes between words such as *k*ill/*s*ill, *k*ey/*s*ee, cac*k*le/cas*t*le, ra*k*e/ra*c*e. In these words they are indeed separate phonemes. The change from [k] to [s] in each pair produces a different word.

There are other cases, however, where the [k]-[s] distinction is of a different kind. These are words such as medi*c*/medi*c*ine, criti*c*/criti*c*ize, practi*c*al/practi*c*e. In these words the change from [k] to [s] does not produce a different word, but merely a different form of the same word. The [k]-[s] distinction in these words is of a very different sort.

These latter pronunciation differences result from automatic pronunciation rules that apply when suffixes are added to certain stem words. Stem words in English often change pronunciation in regular ways when suffixes are added to them, and the [k]-[s] change is just one instance of a broad feature of the language. Such changes are required by the sound system of the language, are highly regular, and entirely predictable. The distinction between [k] and [s] in the latter cases is not a distinctive difference.

Speakers of the language are aware of the different status of [k] and [s] in word pairs such as the above. They know that li*ck* and lis*t*en are not related, and that medi*c* and medi*c*ine are. They know that ra*k*e and ra*c*ism are not related, whereas criti*c* and criti*c*ism are. Although the difference in the pairs is equivalent when one considers only pronunciation, speakers recognize when the difference is distinctive and when it is not.

Why are these particular features of the sound system of English important for reading? Because the spelling system reflects these underlying features of words rather than their pronunciations. When [k] and [s] are distinct in an underlying sense, they are written differently: *k*ill/*s*ill, ra*k*e/ra*c*e; and when they are the same in an underlying sense (although pronounced differently), they are written the same: medi*c*al/medi*c*ine, criti*c*/criti*c*ism.

For the mature reader, this basis of English spelling makes reading for meaning easier. Words that are the same look the same, regardless of pronunciation differences. For the child learning to read, it means that overemphasis on pronunciation can be misleading.

The writing system represents the meaning-bearing items directly, without recourse to how they are pronounced. For this reason the orthography functions well for a wide variety of dialects which, although they all sound different, are, nevertheless, based on the same underlying forms. They simply have different automatic rules for converting to pronunciation. For this same reason the orthography functions well over different historical periods, when changes in pronunciation take place. Both historical change and dialect differences tend to affect the automatic pronunciation rules, rather than the underlying forms.

Consider another way in which the sound of words in reading is not the primary consideration. It doesn't matter, for example, whether one pronounces *poor* and *pour* alike or differently; they are different words and must be identified as distinct when reading. In some dialects they are distinguished, in others they are pronounced alike. Speakers of both dialects must distinguish them in reading because the written form is independent of dialect and represents words at the level of underlying form.

Primary emphasis on pronunciation can thus be misleading for the child learning to read. Word identification takes place at a different level and relies on knowledge of the sound structure of the language to relate to pronunciation. Since the orthography is designed for readers who know the language, beginning reading instruction should take into account the fact that children already know English. Unfortunately some early reading instruction tends to ignore this fact. Children are taught to translate from print to pronunciation through mechanical means equally appropriate for speakers and nonspeakers of English. While such techniques of sounding out words may work effectively for a small set of phonetically spelled words, they unfortunately lead to false and unworkable expectations in dealing with the rest of the language. In the writer's opinion such techniques are best not undertaken in the first place.

What children need to learn to do in reading is to recognize the underlying forms which the spelling system represents, not to try to pronounce the written forms directly. Once children recognize the underlying forms, they themselves supply the pronunciation. In principle, the basis of the system is not one of phoneme-grapheme correspondence. It is therefore misleading to treat it as a phonetic transcription and to try to teach the child in terms of phoneme-grapheme correspondences and pronunciation rules for spelling patterns. The child, by virtue of knowing the language, is equipped to do the converting to pronunciation, once the underlying forms are identified.

The English speaking child is in a different position from a foreigner who is trying to learn to pronounce English from print without knowing the language. Such a foreigner would have to memorize many of the pronunciation rules discussed above because he/she has no set of rules to supplement the spelling system. But English speaking children learning to read are in a much more favorable position, already having mastered the sound system of the language. They have the information they need to supplement the spelling system.

How does one prepare children to identify underlying forms? By providing the basic phonetic information that the children will need to get started: elementary letter-sound correspondences and an awareness of the breakdown of words into their component sounds. Once children have this much alphabetic and phonetic information at their disposal and can work with it, they will be prepared to undertake figuring out the spelling system of English and to deal with its abstract nature.

One of the best ways for the prereader to gain experience with alphabetic representation and with the phonetic makeup of words is through word composition, or writing words according to the way they sound. Children should be given much more practice in writing at the start. Writing in one's own invented spellings, according to the way that words sound, is excellent experience when one is first starting to read, and many children can do this *before* they read. The practice that they get in attending to the sounds of words, in translating from pronunciation to print, and in the principles of alphabetic orthography are invaluable.

What do children have to know in order to be able to write in their own invented spellings? They have to know the letters of the alphabet, and that letters can be used to represent sounds. They also have to be able to segment words into their component sounds.

This latter ability (phonemic segmentation) means that children are aware of the separate sounds of which words are composed. For example, in the word *table* the first sound is [tə], then comes an [ey], next a [bə], and finally an [əl]. Children who can use letters to represent sounds will know that to represent [tə] (the first sound of *table*) they need a T. A child who is aware of these particular facts will be able to *compose* the word on the basis of its component sounds: choosing a T for the [tə] of *table*, an A for the [ey] sound which follows, then a B for the [bə] and finally an L for the [əl] sound: TABL.

Such activities of word composition according to the way that words sound, or invented spelling, form the basis of a beginning reading program in the writer's opinion. The children get practice in attending to the sound of words, in translating from pronunciation to print, and in the principles of alphabetic orthography. When they start to read, they are already practiced and experienced in many of the components of dealing with print.

Interestingly, children who write in their own invented spellings do not assume that there is a one-to-one correspondence between phonemes and graphemes. There are not enough letters in the alphabet to represent all the sounds of English, and children readily double up, using letters to represent more than one sound. For example, *bait*, *bat* and *bet* are all spelled BAT. Also, they don't bother to indicate certain differences that they *do* have letters for, when these differences are linguistically superficial and predictable. For example, WUS (was), BECOS (because), and RASIS (races) are all spelled with S rather than Z. In these cases the *z* pronunciation is automatic and predictable from an underlying *s* form. The children are actually spelling these words in underlying rather than pronounced form. *Zebra*, on the other hand, with underlying *z*, is spelled with a Z: ZEBRE.

What these examples show is that in dealing with print, children are quite prepared to operate abstractly right from the start. They proceed systematically, putting their knowledge of the language to use. They do not expect one-to-one correspondence between letters and sounds, nor do they stick too closely to specific phonetic detail. Rather, they work in terms of organizing principles with regard to the sound structure of the language.

An excellent first grade teacher known to the writer begins with letters and sounds, and having the children write as a first activity, before they read. They compose labels for their drawings, diary entries, stories, letters to one another, and, eventually, as the year progresses, even whole books. All in their own invented spellings. They write the words the way that they sound. Their writing is spontaneous, imaginative, and lively.

This teacher helps the children with the conventions of English spelling that they will need for reading in a variety of ways.

She teaches short vowel pronunciations by using the children's own names: *C*athy, B*e*tsy, Ph*i*lip, T*o*m. She copies some of their own writings in standard spelling, so that the children can read one another's writings more easily. The collection of child-written books grows through the year and forms an important core of reading material for the whole class.

In this kind of setup, the teacher functions as a resource to the children as they begin to read. They need reading materials and a *reason* to read, and they need their questions answered: "What does this word say?" They already have a basis for relating letters to sounds from their writing and can figure out many words from letter cues. They are ready to undertake figuring out the system of English spelling and to cope with its abstract nature.

And here is where the children's ability to organize linguistic material comes into play. Children are experts at hypothesis formation and testing and are able to deduce the system in linguistic material from a wide variety of inputs. This ability is very much what learning to read requires—figuring out in what way spelling relates to the pronounced form of words.

It has been said that in English this relation is indirect rather than direct and that the direct relation is to a more abstract level of representation within the sound structure of the language. Learning to read means learning to interpret the spelling system at this abstract level, converting to pronunciation using one's knowledge of the language. Once children have become experienced in word composition, the best help that one can give them for moving on to reading is a wide range of inputs of written material and answers to their questions as they ask them. Children will apply the organizing principles and figure out the system.

Children should have a great deal of written material available in the environment: labels, signs, written instructions for tasks, letters that they receive, recipes to cook from, cereal boxes on the breakfast table, and of course books and magazines. Even commercials on television are good sources of something to read.

Listening to someone read aloud while following along in the text is particularly valuable for children in the early stages of reading. Tape recorded stories and books are good for this purpose. It helps if the child keeps the place with a finger as the voice proceeds. A good classroom activity, which can be engaged in daily, is Sustained Silent Reading (SSR), artfully described by the

McCrackens in *Reading is Only the Tiger's Tail* (3). All of these activities provide meaningful exposure to print and the means for children to formulate the principles necessary to relate spelling to the language that they know.

Inventive spellers work out their own rules for the relation between print and pronunciation, either overtly or implicitly. One such child was observed mispronouncing *Joan* as *Jane*. When told that it was *Joan*, he replied, "Oh, I see. The A is silent. I thought the O was silent."

This child provided a glimpse into his method of coping with the system. But whether children let teachers in on how they do it, what they need in order to read, beyond specific background information, is adequate exposure to written materials, answers to their questions, and feedback to know when they have made mistakes. They will carry out the internal organization of the linguistic material.

Up to this point, in dealing with the orthographic system and how children learn to interpret it, *what* children read has not been considered. Since there is now some beginning evidence that reading may play a role in the course of language development, the writer would like to consider some findings that relate reading exposure and language development.

In the course of some recent studies on language development in children between the ages of six and ten, the writer had the occasion to take a rather close look at what the children were reading. An attempt was made to get an inside look at the private reading life of a group of young children—what books are read to them, what they read on their own, how much time they spend reading or listening to books read aloud, and what they remember from past reading exposure.

The impact of children's independent reading (and listening to books read aloud) on their language development was of primary interest. The written language, after all, is potentially of a more complex nature than speech, both in vocabulary and syntax. The child who reads or listens to a variety of rich and complex materials benefits from a range of linguistic inputs that is unavailable to the nonliterary child. One might expect this exposure to contribute to increased knowledge of the language; in fact, the evidence does point in this direction. The results contained some rather intriguing indications that exposure to the more complex language available from reading does go hand-in-hand with a more mature grasp of the syntax of English.

The children studied were kindergarten through grades four students in an elementary school in a suburb of Boston, Massachusetts.

Linguistic development was measured by a series of psycholinguistic experiments reported by Chomsky (*1*). Although the general pattern was one of gradual improvement with increase in age, there was a high degree of individual variation so that, for example, some children age nine and one-half or ten were two or even three stages behind others of age seven. Age alone was not a reliable predictor of linguistic stage.

Reading exposure was judged by assessing how much and what is read to the child and how much and what the child reads on his/her own. The attempt was to characterize each child's independent reading and get a picture of how reading functioned in his or her background and current life. Both the amount read and the complexity of the material were taken into consideration. Many different measures of reading exposure correlated positively with linguistic stage.

A check into the children's familiarity with the content of a variety of children's books, poems, and stories yielded one good measure, obtained through use of Huck's *Taking Inventory of Children's Literary Background* (*2*), a questionnaire involving sixty well known books. Scores ranged from 12 to 51 correct. The more themes from the literature the children recognized, the higher in general was their linguistic stage in the data.

Another source of information was a list of some 400 children's books left in the home for the children to look over with their parents. They were asked to check all books with which the children were familiar, either from reading or being read to, and to add any books they wished. Here the number of books checked off that were at the top level of syntactic complexity correlated positively with linguistic stage. The *total* number of books checked was also a good indicator, though not quite as good as the top level count.

Interviews with children and parents yielded a number of good measures that varied with the linguistic stage of the child. Questions centered around reading aloud and independent reading by the child. One good measure was the average complexity level of books named by the parents in the course of the interview. Another was a numerical score calculated from the child's responses to a series of questions such as those concerning library trips (What books do you have out this week? How many of the books that you take out do you generally read?), favorite books and authors, books reread many times, time spent reading daily or weekly, TV viewing (credit given inversely to amount of time spent watching TV), and number of people at home reading to the child, now or earlier.

The information gathered gives some idea of what was popular in Cambridge, Massachusetts, in the early 1970s. Dr. Seuss books, fairy tales, and *Life* magazine headed the list of child-named reading matter, with *Chitty Chitty Bang Bang* the most frequently named single title. Comic books (Charlie Brown cartoons in particular) were high on the list. Parents and children both reported the Bible and Bible stories with considerable frequency.

Seuss and A.A. Milne headed the list of parent-named books, with the Bible and fairy tales next. *Charlotte's Web* and *Stuart Little* were the most frequently named single titles by the parents. Other books frequently named by both parents and children were *Winnie-the-Pooh*, *Cinderella*, Mother Goose, and *Wizard of Oz*.

Books checked on the list of 400 also provided a picture of what the children were reading and what kind of background in literature they had acquired. Here McCloskey's *Make Way for Ducklings*, a popular read-aloud story whose locale is Boston, headed the list with 28 out of 31 respondents having read or listened to it. Other frequently checked books were such favorites as *Winnie-the-Pooh*, *Peter Pan*, folktales, *Alice in Wonderland*, *The Red Balloon*, and *Curious George*.

The children also kept track for one week of all reading and listening that they engaged in, writing down each day what they read or listened to and the number of pages. These accounts provided a glimpse into the current private reading lives of the children. A few books were read in school, most were read at home. One girl reported rather tellingly in her "Reading done at school" column: "I don't have time to read in school." A number of books recur here, too: *Mr. Popper's Penguins* (three children), *Little Engine that Could* (three children), Charlie Brown comics (five children), and *Life* magazine (three children). Over half the children reported reading comic books. Many reported the Sunday comics. Newspaper reading began in the fourth grade, but alas, among the boys only.

Some of the more complex books read to the children were *The Hobbit*, *The Lion, the Witch and the Wardrobe*, *Adventures of*

Sherlock Holmes, and *Grimm's Fairy Tales*. Those they read on their own included *Borrowers Aloft*, *The Hobbit*, *Little White Horse*, *Little Women*, and *The Story of Dr. Doolittle*.

The differences among the children in reading background were, of course, large. During the interview with the children, some were able to name as many as 20 books, and others only 2 or 3. The number of books checked on the list of 400 left in the homes ranged from as few as 9 books to as many as 247.

The amount of reading during the tracked week naturally varied widely as well. Among the prereaders, the range was from children who were not read to at all at home to the one who listened to over 27,000 words a week. The latter child was the youngest of three children and had a grandmother living next door who read to her regularly every night. The amount of reading aloud to the children decreased sharply, as would be expected, after first grade. In kindergarten and grade one half of the children listened to 14,000 words per week or more. Once the children reached the end of second grade, no one was read to at this rate any longer. The children's own reading had taken over. Even in first grade, one observed the children's own reading already beginning to replace their listening; those first graders who had higher totals in independent reading had correspondingly lower totals in the listening tallies.

Among the older children, again reports ranged from one child who reported no reading at all to an eight-year-old active reader who reported 322,000 words read in the tracked week. She read *Borrowers Aloft*, *Little White Horse*, *Find the Constellations*, *Myrtle Albertina's Secret*, *Helen Keller*, *Pinocchio*, *The Enormous Egg*, a Charlie Brown comic book, *Amelia Bedelia*, and a number of other stories. This child was in the top linguistic stage with quite a variety of levels for a second grader, ranging from the lowest complexity rating to the highest. In general, reading at many different complexity levels, low as well as high, was characteristic of the heavy readers.

It appears from the data that children do benefit, in terms of linguistic development, from the kinds of exposure and inputs provided by the written language. It is the writer's view that children should be encouraged to read widely, for pleasure, and to read books as complicated as they are willing to tackle. It doesn't matter if they miss some of what is in the book. That is how everyone reads, after all—slowing down here, skipping there, picking, and choosing as one goes along. Why shouldn't children be encouraged to do the same?

There are some teachers and reading specialists who prefer to confine children's reading, in school or for school, to books that the teachers themselves have read or for which prepared questions exist which deal with the content of the book. When this approach is challenged, the response is, "But otherwise how can I be sure he or she actually read the book?" One can't, of course, and, in this writer's view, so much the better. The idea that children should be held responsible for every bit of their reading for pleasure is incompatible with, even destructive of, the very notion of reading for pleasure. Why shouldn't children be encouraged to read, with teacher approval, for their own purposes and wherever their interests take them? Certainly children can benefit from talking over things that both they and their classmates or teacher have read, but a portion of their reading can reasonably be expected to be for themselves alone.

In the long run what children need to do, if they are to grow up into reading adults, is to read for their own purposes. Whether it be for pleasure, to find out about something, or for whatever reason, reading must come from internal motivation rather than from someone else's requirements. The sooner children are permitted to acknowledge the private nature of reading, to develop personal tastes and judgments, and to expect their own interests to direct their reading activity, the better. Fostering this kind of attitude in children ought to be a central part of the school's role.

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Spanish Reading for Spanish Speakers: A Theory and Classroom Implications

Sarah Hudelson
Arizona State University

Theory

An important component of many Spanish-English bilingual programs has been the teaching of reading in Spanish to Spanish speaking children. Numerous teaching materials and methodological guidebooks are available (*8, 9, 10, 22, 25, 29, 30*).

Many materials present what seems to be, in light of recent work done in psycholinguistics and reading (*12, 27*), a relatively unsophisticated view of the reading process. This view maintains that, because of the quite regular grapheme-phoneme correspondences in Spanish, skill in Spanish reading is attained virtually exclusively by the learning of the sounds that are associated with the graphemes and by the subsequent pronouncing of words from their component sounds. It has been both implied and stated explicitly (*8*) that the nature of Spanish reading is essentially different from the nature of English reading.

This view differs drastically from definitions and models of the reading process proposed by many writers (*12, 18, 20, 27*). Reading, for them, is considered to be a process in which readers bring to the written page their knowledge of their language and how it functions. Readers are language users first. The reading process involves readers' choosing selected visual cues rather than simply reading letter by letter. Using their knowledge of what is possible phonologically, syntactically, and semantically in language, readers take the visual cues that are available and predict or anticipate meaning. They then use successive focusings to confirm or to deny their predictions.

The above formulation has been posited for skilled readers. In addition, many studies of young readers reading in English (*1, 5, 6, 7, 11, 13, 14, 15, 21, 24, 26, 31, 32*) indicate that beginning readers and young readers employ some of these same sampling and predicting strategies, using their language backgrounds to predict sentence content. Goodman (*12*) suggests, but without substantiation, that this process is essentially the same across languages.

In early work done by Spanish and Latin American professionals in reading, the reading process was seen basically as one of converting symbols to sounds and sounds to syllables and words (*4*). More recently, however, researchers have defined reading as a cognitive process in which readers interact with material they are reading to extract information from it. The basic activity is regarded as a mental one (*2, 3, 19, 28*). In contrast to English reading, however, no descriptive studies have been found of Spanish speaking children reading in Spanish.

A study, therefore, was undertaken to examine the oral reading behavior of young native Spanish speakers reading in Spanish. The study was based on research done by Goodman (*11*) with young English readers. Goodman had young readers read first a list of isolated words and then a reading selection containing the same words. In comparing the errors (or miscues as Goodman calls them) made on the word list to the errors made in the contextual selections, Goodman found that all of the children were able to read many words in context that they had missed in isolation. He suggested that the children were able to read more accurately in the contextual selection because they had a story line to go from to help them predict words. Goodman also noticed that the children did make errors in their contextual reading. In examining these miscues, he noted that when the miscues made retained the meaning of what was being read, they were less likely to be corrected. However, if the errors changed the meaning of what was being read, they were more often self-corrected.

Taking Goodman's basic idea, this study investigated whether young Spanish speakers reading in Spanish would read with equal accuracy from a word list and from a contextual selection containing those same words. The study also examined the ability of Spanish speaking children to predict words covered up in a reading selection. The following questions were asked:

1. When native Spanish speaking children read in Spanish both a list of isolated words and a reading selection containing those same words, will a significant number of words read incorrectly from the word list later be read correctly within the selection?
2. When native Spanish speaking children read in Spanish both a list of isolated words and a reading selection containing those same words, will some of the words pronounced correctly on the list later be pronounced incorrectly in the selection?
3. When native Spanish speaking children read a selection in which every seventh word has been covered, will they be able to predict the missing words (effect clozure) with a success rate of at least 50 percent?

The subjects were seventy-five native Spanish speaking Mexican American children from the second and third grade classrooms in two schools in a south Texas border town. All of the children were pupils in a bilingual program. All had received initial literacy instruction in Spanish. The subjects were chosen through a random selection process. Fifteen subjects were chosen at each of five instructional reading levels, preprimer through third grade.

Spanish reading selections were chosen from the Santillana Bilingual Series and the Senda Series. Two selections were chosen at each level. One of these selections had every seventh word covered. The other did not. Word lists, containing the same words as the uncovered selections, also were constructed for each level.

The subjects first read the isolated word at their instructional level. All children were instructed to do the best they could, with no help from the experimenter. They were told that if they came to words they could not read at all, they were to go on. The subjects were not told whether their responses were correct or incorrect. In a second sitting at least a day later, all subjects read the selection at their instructional level. Again, they received no help from the experimenter. Finally, all subjects read the selection in which every seventh word was covered. The children were told to read the selection and to try to figure out the missing words. No help or confirmation of predictions was provided. All readings were taperecorded.

Following transcription of the tapes, the following computations were made:

1. At each instructional level, the errors made originally in reading the word list were compared to the errors repeated in the selection. The mean percentages of errors made on the word list that subsequently were corrected in the selection were computed.

2. At each instructional level, the mean percentages of errors made only in the selections (errors made reading the selections which previously had been read correctly from the word list) were computed.

3. At each instructional level, the mean percentages of covered words predicted correctly were totalled. Subjects received credit for both exact words and acceptable substitutes (a word of the same form class as the covered word that did not alter the meaning of the sentence, or a word of a different form class that did not alter the meaning of the sentence).

The following results were noted:

1. At every reading level studied, significant numbers of words (at least 50 percent) pronounced inaccurately on the word lists were pronounced correctly in the selections (Table 1).

Table 1. Errors Made Reading the Word Lists that Were Read Correctly in the Selections

	Preprimer	Primer	First	Second	Third
Percentages of errors made on word lists that were read correctly in selection	$\bar{X}$ 54.7%	$\bar{X}$ 71.4%	$\bar{X}$ 85.2%	$\bar{X}$ 91%	$\bar{X}$ 80.3%

The beginning readers corrected at least one-half of the errors they made while reading the word lists when they read those same words in the reading selection. The more advanced readers corrected over three-quarters of their errors.

With increasing skill, young readers reading in Spanish were able (at the levels studied in this research) to read correctly in a selection many words read incorrectly from a word list.

2. At every reading level studied, many words that children had pronounced correctly on the word lists later were pronounced incorrectly when they were read in the selections (Table 2).

Table 2. Errors Made in the Selections that Were Read Correctly on the Word Lists

	Preprimer	Primer	First	Second	Third
Percentages of errors made in the selection that were previously read correctly from the word list	$\bar{X}$ 26.8%	$\bar{X}$ 49.4%	$\bar{X}$ 85.3%	$\bar{X}$ 75.2%	$\bar{X}$ 76.5%

Having noted this phenomenon, these contextual errors were examined more carefully. It became apparent that in the majority of cases these errors retained the meaning of what was being read. The subjects appeared to be reading the first letters and to be predicting from them, on the basis of story content. A character's name, for example, might be substituted for another, such as *Ramón* for *Rosa*, or *Tito* for *Toni*. Verb tenses were altered as in substituting *dice* (he says) for *dijo* (he said), *está* (it is) for *estaba* (is was), *tiene* (he has) for *tenía* (he has—imperfect tense), *comienza* (it starts) for *comenzó* (it started), *te encuentras* (you find yourself) for *te encontrarías* (you would find yourself) and *quiere* (he wants) for *queria* (he wanted—imperfect tense). Adjective forms were modified, as in the substitution of *chicos* or *chiquititos* (both meaning small) for *chiquitos* (also meaning small). The form was slightly changed, but the meaning was retained. Noun forms also were altered somewhat. *Cabezota* (meaning a head of a large size) was substituted for the form *cabeza* (head) and vice versa. *Pieses* for *pies* (feet) was a frequent change, the readers adding an extra *es* to an already plural form. This addition often occurs in the speech of Mexican American children and adults. Words that from this writer's experience are less commonly used by young children, such as *el muneco* (doll of a masculine gender) and *la cuerda* (jumprope), were substituted for by words that are more commonly used by Mexican American youngsters (in these cases, *el mono* or *la muñeca* and *el cordón*). These changes did not change the meaning of what was being read, but they did reflect the fact that the children were much more comfortable with some words than with others. The readers made some modifications of the print, rather than being bound by the print.

3. At every reading level studied, when both exact words and acceptable substitutes were included, subjects were able to predict the covered words with at least 50 percent accuracy (Table 3).

In examining the acceptable substitutes made, it was obvious that subjects were using their knowledge of Spanish and the syntactical and semantic constraints of what they were reading to predict missing elements. For example, in the sentence *Los bomberos saben lo que hay que hacer cuando hay fuego* (Firemen know what has to be done when there is a fire), *fuego* (fire) was one of the words that was covered. Other words meaning fire (*quemazón*, *lumbre*, and *incendio*) were substituted. Also substituted was the word *peligro* meaning danger. In another selection, *dijo la señorita*

Table 3. Performance of Subjects on Clozed Reading Selection

Subjects	Mean Percentage of Exact Words Predicted	Mean Percentage of Acceptable Substitutes Predicted	Mean Percentage of Total Acceptable Predictions
Preprimer	52.6%	20.9%	73.5%
Primer	44.6%	23%	67.6%
First Grade	43%	23%	66%
Second Grade	30.3%	23.7%	54%
Third Grade	54.6%	23%	77.6%
All Subjects	45%	22.7%	67.7%

(the young woman said) appeared. *Señorita* was the word covered. Frequent substitutions were *maestra* (teacher) and *señora* (woman), both of which retained the meaning of the sentence since the locale of the selection was a school. In the clause *no había lugar* (there wasn't any room) two substitutions for *lugar* (room) were offered. Both *asiento* (seat) and *espacio* (space) retained the meaning of the paragraph in which the clause appeared. This writer's position is that readers were constructing meaning without seeing every word, and they were able to predict the missing words as they constructed meaning.

On the basis of the data presented above, the following conclusions may be drawn:

1. Native Spanish speaking Mexican American children reading in Spanish without interruption or correction from the experimenter did make word recognition errors. These errors were made both when the subjects read a word list and when they read from a connected passage. Some of the errors made on the word list later were corrected in the selection. Conversely, some of the errors made in the passage were not made when the word list was read (Tables 1 and 2).

2. The children did read with more accurate word recognition when they read from a reading selection than when they read those same words from a word list. When they read the word list, they relied on whatever phonics skills they had developed. However, when they read a passage, they were able to use not only their phonic attack skills but also the context of what they were reading. This phenomenon supports Goodman's research with English readers.

3. The children did use the context of what they were reading as well as their phonics ability to anticipate and to predict. In many instances, subjects who had read words correctly in isolation later read them incorrectly within the selection (Table 2). Yet the majority of these errors did not change the meaning of what was being read. Rather, they demonstrated that the readers understood what they were reading and were anticipating as they read. This finding, too, supports Goodman's findings.

4. The children were able to predict missing words with considerable accuracy (Table 3). Particularly the acceptable substitutes noted suggest that the subjects were using syntactic and semantic cues in their reading.

It would appear, therefore, that this writer's contention is confirmed that young Spanish speaking readers (as do young English readers) use contextual cues when they read in Spanish. To maintain that Spanish speaking children use only their knowledge of letter sounds and syllable patterns when they read in Spanish oversimplifies the process.

Classroom Implications

As a result of these findings, several instructional strategies were implemented in Spanish reading program of this particular school district. These strategies follow:

1. It was noted that all of the subjects had participated in a Spanish reading program for at least a year. According to the program director, the focus for reading instruction had been strictly synthetic phonics, taught in groups. Yet after a year or more, many children (especially those reading at preprimer and primer levels) had acquired limited reading skills. Therefore, the staff questioned use of phonics as the only word recognition strategy. Since the basic unit of recognition in Spanish is the word (*16*), it was decided that whole word teaching strategies should be a part of initial reading techniques in Spanish. Phonics instruction was to be considered as one word attack skill to be learned in Spanish reading. But it was decided that phonics would be taught in conjunction with whole word (and contextual) strategies. Children would receive instruction in several word attack skills, not just one.

Given that Spanish speaking pupils were able to read some words in sentences that they were not able to read on isolated word lists, it seemed logical to present words in beginning reading experiences in the context of sentence patterns that pupils would read in reading material rather than on isolated flash cards. Such an introduction would serve to help children anticipate patterns in reading material. It would also use the children's language background and knowledge of sentence structure in Spanish. Therefore, the whole word-pocket chart strategies for high frequency English reading words developed by Guszak (*17*) were transferred into beginning Spanish reading. At the same time that pupils were learning sound-to-symbol correspondences and phonic blending, they were learning to read whole words in sentences.

It should be noted here that the majority of the words in the preprimer and primer books in both the Laidlaw and Santillana Spanish reading materials (which were used in the district) are words that appear on a list of *palabras de mucha frecuencia* (words of high frequency), a list similar to a high frequency list for elementary English reading materials. The words on this list occur with great frequency in elementary Spanish reading materials. For children to recognize them instantly, then, could benefit them in reading children's books in Spanish.

The whole word strategies introduced into the program are the following:

Using a pocket chart or chart tablet and word cards or sentences and sentence strips, the teacher introduces new words by *modeling* a sentence such as the following:

Ven a jugar

The pupils, in a small group and individually, repeat the sentence.

The teacher then *frames* one word and asks a child or children to identify that one word.

> Teacher: If the whole sentence reads *Ven a jugar*, what is this one word? (framing that word, for example, *ven*). Thus pupils learn individual words in the context of sentences.

The teacher later uses known words to *substitute* in new words.

> Teacher: Let's review. What is this sentence? (putting up a sentence—*Ven a jugar.*) The children read the sentence. Good. Now I'm going to change the sentence. (The new word *vamos* is inserted on top of the word *ven*, and the teacher models the new sentence.) Now the sentence reads *Vamos a jugar*. The children then repeat the sentence and the teacher frames the new word.

The teacher might also use a *cloze* strategy to introduce a new word, by setting up a sentence containing a new word but leaving the new word out. An example is: *Busca a Rosa. ¿Donde___ Rosa?* The teacher then asks the children to read and predict the missing word. (Samples of teacher speech are given in English for the benefit of non-Spanish speakers. All instruction, of course, is in Spanish.)

Finally teachers were urged to use a *composing* strategy in which children were given word cards they knew and were asked to construct sentences using these cards.

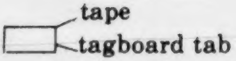
Initially, the first grade teachers especially were quite skeptical about using these strategies. But as they used them, they found that children were able to learn these high frequency words as whole words (while they were learning sound-letter correspondences), that they enjoyed and were able to compose, and that they were able to begin to read in a book after one or two weeks of school instead of after several months. The program director also began to compare the numbers of first graders who were able to read at a first grade level by the end of the first grade. With a totally synthetic phonics program, about 12 percent of the children achieved this level. With the combined program, in its first year 22 percent of the children were reading at first grade level. In its second year, 38 percent were reading at first grade level or above.

It appears, then, that these strategies were having some success.

2. It was decided that strategies for giving young readers specific practice in using the context should be included as part of the Spanish reading program. Therefore, what this writer calls "closed" readers were constructed (another idea from Guszak). In closed readers certain words in the basal reader stories are covered by taping small tagboard tabs over the selected words. Rather than covering every nth word, teachers are asked to cover words they feel pupils will be able to predict. Multiple copies of the books at various reading levels may be prepared so that several pupils may use the readers for independent reading activities. The pupil then receives the assignment to read certain pages in a closed reader (at the pupil's independent reading level or instructional reading level). As pupils read, their task is to predict the missing words. The tagboard tabs are taped only at the top edge and after the pupils have made predictions, they are able to lift the tab to confirm or to deny their

predictions. An example follows:

Vamos a jugar. Vamos a



At beginning reading levels, entire words are covered. At higher levels, the initial letter or syllable may be left visible so that children must limit their predictions to words beginning in a certain way. Teachers using these books have found that pupils do try to predict before lifting the tabs and that they enjoy the activity.

In addition, the teachers have made concerted efforts to develop use of the context exercises in which pupils choose one of two words to complete a sentence. A few of these exercises were found in workbooks, but the majority were teacher made.

Vamos a____ en la escuela.
está leer

Most were constructed to be self-checking so that the pupils could do them independently. In these ways, teachers at all grade levels were able to work with pupils on using the context in their reading.

3. This writer considered another instructional strategy resulting from the research to be one involving teacher behavior during oral reading by children. Both teachers and aides were accustomed to stopping a pupil for any reading miscue and "correcting" the miscue made. Yet, the research presented here suggests that many of the miscues children make demonstrate that they are getting the meaning of what they are reading and that the substitutions they make fit the context of what is being read (see Table 2 and discussion).

In several inservice workshops, this writer and other program staff presented to teachers and aides multiple examples of the oral reading miscues generated by their children. Discussions were held concerning the idea that many of these "errors" were not necessarily poor reading behavior. Tapes were played of children reading without interruption, and the teachers and aides were asked to distinguish between miscues that changed the meaning of what was being read and miscues that did not change meaning.

Finally, both teachers and aides were given several specific suggestions to follow when listening to oral reading:

a. Avoid automatically stopping a child for a miscue. Let the child read to see if the miscue is self-corrected.

b. If the miscue is not self-corrected but retains the meaning of what is being read, do not "correct" it. Allow the child to make a few miscues in reading, especially when the miscues do not destroy meaning.

c. Focus only on those miscues that destroy the meaning of what is being read. Go back after the child has read (not while he is reading) and deal with those miscues.

d. If a child is having problems pronouncing a word, have the child cover the word with a finger and then read the rest of the sentence (on both sides of the word) and predict the missing word. The first letter or letters may also help, and they may be used. Don't always make children sound out every word syllable-by-syllable with perfect accuracy.

In classroom visitations, this writer has noticed several teachers and aides trying to follow these ideas. Many truly focus on the meaning of what the child is reading, rather than on perfect word recognition accuracy.

4. Many of the teachers had expressed concern that the reading materials the pupils were using contained words that the children (and the adults in the community) did not use. Therefore, they assumed that the children would not understand what they were reading. In workshops and in demonstrations with children it was shown that very frequently children were able to determine the meanings of words by using the story line and available pictures. Indeed, they were able to comprehend words not in their speaking vocabularies, provided that the majority of the words in the selections were familiar. When asked to define such words, children frequently were able to do so. As a result, some specific suggestions were given to teachers about vocabularly work in reading.

a. If a teacher feels the need to introduce new vocabulary in a story, the new vocabulary should be introduced in the context of sentences and stories rather than in isolation. Children should be given opportunities to predict word meanings from sentence and story content. In some cases, the meanings of unfamiliar words become quite obvious through the story.

b. When asking children to define words, ask for a definition after children have had the opportunity to read the word in a meaningful context. Don't ask for a definition of an isolated word.

c. Teach children to predict word meaning using the story context and then go to the dictionary or glossary to confirm or to deny predictions. Children should be permitted to see the dictionary as a tool for meaningful comprehension, rather than something that is used for meaningless exercises.

Again, in classroom visitations, this writer has observed the use of the contextual word meaning techniques described above. It is particularly exciting to see supposedly disadvantaged children exposed to the idea that there are many varieties of Spanish and that they can expand what they know in Spanish as they use a variety of Spanish materials.

There are probably many more classroom implications to be drawn from this and other research into children's reading. The ideas presented are but a beginning. It is up to all educators to examine research carefully, to experiment with implications that seem sensible, and to share results with others. Research *can* be relevant to the classroom, particularly research that deals with children's oral reading behaviors. But one needs to examine research carefully to make it relevant.

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Matching the Child's Level: One Aspect of a British Preschool Intervention Study

Sara Meadows and Janet Philps
The Open University

Angela Simkiss
Heathfield Nursery School, Acton, London

Asher Cashdan
Sheffield Polytechnic

The nursery school has come to be seen, in Britain as in the United States, as a potentially important instrument for education generally and for the amelioration of social inequality particularly. Nursery school education was expected to immunise disadvantaged and deprived children against later school failure. These hopes have not been fulfilled by the expansion of nursery school provision (*6*). This study has two major objectives: 1) to discover what is normal nursery school teaching practice and 2) to measure the current effects and short term outcomes of a specially designed intervention program for teachers. The failure of nursery schools hitherto to give their alumni lasting educational advantage does not necessarily imply either that the failure cannot be explained or that it cannot be avoided. The study is, therefore, looking at teachers' styles and their perceptions of children and relating them to the children's behaviour in school. Of particular interest are the effects on both teachers and children of the teaching program implemented. The major part of this paper is concerned with one particular aspect of the intervention work, but it begins with a short description of the study as a whole.

A total of twenty-five teachers from ten schools in Outer London took part in the study over four school terms. For the second term and part of the third half of the teachers were involved on the intervention program. As observers, the writers collected data on teachers' and children's verbal and nonverbal behaviour in the classroom throughout the school day and coded it according to several different category systems (5). One-to-one sessions with eight different children were also recorded for each teacher, using standard material supplied by the writers. The children were selected from class on the basis of teacher ratings (mature, intelligent, cooperative, quiet, prefers active games, sociable). These constructs were also used in a formal Repertory Grid analysis of a teacher's views of the children.

All of the teachers were observed and interviewed during the first term. Half of the teachers also cooperated intensively on an attempt to modify their teaching styles. The writers held group meetings, worked with teachers in their classrooms; provided relevant reading matter, techniques, materials and analyses of practices; and finally began working with teachers on a series of booklets describing and evaluating the joint experience of the teaching program. It is this last activity that is the main subject of this paper. Discussion of the booklets also continued during the fourth term observation phase (September-December, 1976).

The experimental approach was derived in some large part from the work of Blank (2). Most of the modifications made were designed to make the tutorial approach more acceptable to British teachers and more useful in the open classroom situation. The approach consisted of a body of quite specific techniques and practices, justified a priori in terms of the writers' view of the learning process and regarded as taking place in "cycles of assimilation and accommodation) in children who are actively seeking to construe the world of objects and people with which they are involved. The writers believe that sensitive intervention by others can accelerate, help in the generalizations of, motivate, involve, and make coherent the child's learning. The program has in practice six basic principles:

1. Within the classroom setting, the teacher works with one child for short sessions.
2. During these sessions the teacher has and maintains a relationship of confidence and mutual enjoyment with the child.

3. The teacher uses materials which are concrete, meaningful, and interesting to the child and which avoid arbitrary or abstract categorisations, unless the child is very competent.
4. The teacher structures the session by beginning with an explicit introduction and ending with a systematic review and giving the child explicit statements of aims, reasons, and achievements.
5. Teachers matches their demands to the present capabilities of the children.
6. By the judicious use of follow-up questions teachers maximise the children's feelings of success.

The teaching intervention was a period of great learning for both teachers and researchers, and one of its most interesting products has been a joint endeavor by those who have taken part in it to describe their experiences and to sort out what in the program was most valuable. A series of booklets are being produced on various aspects designed for the use of practising teachers.

Among the aspects considered in these pamplets are planning sessions, the use of materials, matching levels, integration of the approach into a teacher's normal day, observations for teachers, and controversies in nursery education. These areas are complementary and closely integrated in the teaching program but are dealt with separately in order that the booklets might be short, simple, and quickly and easily digestible by teachers. For most of them, the first draft was written by a member of the research team, incorporating material in the form of examples, statements, and discussions by teachers particularly interested in that area. These drafts were discussed first by the research team and then by teachers and are still undergoing considerable revision. It is hoped that this work will continue as a curriculum development project. The remainder of this paper consists of one example of the series, the draft pamphlet on matching levels. It is selected as being particularly central to the dissection of the teaching program, especially in terms of the language interchange between teacher and child. The teacher working with Elaine, Amelia, and Samuel contributed ideas and examples in early discussion and has discussed and criticised drafts.

Matching Levels

1. Introduction: Why match levels?
2. What does matching levels involve?

3. Children's errors
4. Follow-up techniques
5. Levels
6. The teacher matching levels

1. Introduction: Why Match Levels?

One of the most important things stressed is the need in teaching to tailor one's approach quite precisely to the child. This is one of the most important and most difficult aspects of teaching, particularly for nursery school age children.

It is important to match the child's level for several reasons closely related to the main aims of the nursery school experience. The broadest aim is to encourage the child to enjoy learning, finding out, and understanding. The best (easiest and longest-lasting) learning takes place when there is a small difference between what children can do already and what they are asked to do or learn (*4*). If the discrepancy is small—if the task is one which is already well mastered—then there is no challenge in the situation, no need to make any effort, and no new learning that will take place. At best, the children will have an opportunity to practise a skill they already have; but, at worst, they will be bored by being asked to do something that is too easy. If, at the other extreme, the discrepancy is too great and the task too far beyond the children's repertoire of skills, then the challenge of the situation is overwhelming and frightening and the children think they cannot possibly succeed and do not try. At best, the one opportunity for learning is lost; more likely, the children will either see themselves as a failure or see their teacher as an insensitive person, perhaps from a remote world, making impossible and meaningless demands.

If the first reason for matching the children's levels relates to this basic psychological mechanism of the best size of discrepancy for learning and motivation, the second is the related matter of what education involves. An important feature of nursery school teaching is that teachers are providing the children with their first experiences of school, which are going to occupy a good part of their waking hours for at least the next eleven years and which may well determine the course of their entire adult lives. It could be an overstatement to say that children's experiences at nursery school will determine what they make of their later schooling, but certainly the nursery school can set them up with expectations of schools and teachers which will strongly influence their later reactions to education. It can also have an important influence on the children's opinions of themselves. It is disturbing that a child of three can have learned to think of himself as a failure, as someone who can't succeed and so doesn't try; but this attitude certainly does develop, and children's experiences with adult demands are important influences in their development of self-images.

Matching the child's level and asking him to perform slightly difficult tasks can be important for several different reasons:

1. The match-mismatch theory of motivation and learning—the belief that a small intellectual effort of extension is the best situation for learning and perfecting children's understanding of their world.
2. Children's ideas of school—the desire that children see school as an interesting place where adults make demands which children can meet successfully and where adults are sensitive to children's capacities and are interested in children as individual.
3. Children's ideas of themselves—the desire that children meet a high proportion of successful experiences in school so that they continue to view themselves as capable of understanding and making discoveries in a world where their curiosity and liveliness of mind are not discouraged.

2. What Does Matching Levels Involve?

It is easy to explain why matching children's levels is important, and probably the idea is well accepted by most teachers. The difficulties arise when one is asked how this matching can be done. The process must have two parts: it is necessary first to discover what the children's levels are and it is then necessary to know what is the next level that they might appropriately be asked to reach. And the diagnosis and analysis do not, of course, complete the teaching process, for the teacher has to take some appropriate action to encourage the children into learning. It is probably simplest to separate these aspects of the teaching intervention and deal with them in this natural order of diagnosing the present stage, recognising the next one, and then taking the appropriate action.

Educators have tried to provide teachers with a variety of diagnostic techniques. The first and obvious one is to *observe* the children in their ordinary activities in the classroom and playground. This subject is dealt with at more length in another booklet in this series "Observations for teachers." All one need say here is that although observation of children's ordinary activities can tell a great deal about what the children does spontaneously, it tells much less about how the child will behave when talking to an adult in a one-to-one situation. Some children blossom when an adult concentrates on them; others withdraw in painful shyness and fright. Observation can give some inkling of what the child is likely to do and what tasks may be congenial and for how long; but in the majority of sessions the writers did, both teacher and researcher learned something new and unexpected about the child's capacities.

Observation will probably give enough information to pitch the first one-to-one session at approximately the right level. There is no need to be afraid of getting it slightly wrong because the errors that the child makes are useful sources of information. Every type of question in which children fail pinpoints an area in which they need help. Only when difficulty is exposed does it become possible to give children the help they need to get around the problem. It is positively necessary, therefore, to allow children to make errors, to establish why they make errors, and if possible to lead the children to correct answers. It is most important to avoid child failure due to constant repetition of the same sort of question or even of the identical question, as in this example:

The teacher is helping the child to do a puzzle.

T	Put in the man.	C	Tries to put piece in front of the bus.
T	He stands on the back of the bus.		
T	On the back of the bus.	C	Tries to put piece at front of the bus.
T	On the back.	C	Tries to put piece at front of the bus.
T	On the back.	C	Tries to put piece at front of the bus.
T	On the back.	C	Tries to put piece at front of the bus.
T	On the back.	C	Tries to put piece at front of the bus.
T	Where's the back of the bus?	C	Tries to put piece at front of the bus.

T	Where's the back of the bus?	C	Tries to put piece at front of the bus.
T	At the front of the bus.		
T	Where's the back of the bus?	C	Tries to put piece at front of the bus.

Failing to answer is one of the most obvious ways in which children fail to meet a teacher's demand. Unfortunately, this is relatively uninformative. The child may not have heard the question, may not have understood some part of it, may not know that an answer is expected, may not feel like answering, or may genuinely not know the answer. It is the teacher's task to find out which of these caused the problem by using an appropriately varied question to encourage a more easily analysed answer. Usually, there are indications in the child's behaviour of what the problem might be. As an example, imagine that the teacher asks, "Why doesn't this (cube) brick roll?" and the child does not answer. If the child makes no response at all, looking at neither the brick nor the teacher, then one might suppose the child didn't hear the question. Repeating the question would probably be worthwhile in this case, perhaps calling the child by name and being sure of getting attention, "Look, John, why doesn't this brick roll?" There may be something in the question which John doesn't understand, and this can be checked. Does he know what *roll* means, for example; is it perfectly clear which brick he's being asked about?

It could be useful here to demonstrate how differently a cylinder and a cube move, as a preliminary to discovering the effects of having or not having corners. Has the child realised the question was one needing an answer? The particular phrasing, with a conspicuous *why*, makes it fairly unlikely that the child has not understood, but many teachers' questions are not obvious questions. "John" may not have realised that it is *he* who is expected to answer, particularly if there are other children around; it is one of the advantages of a one-to-one situation that the child cannot expect someone else to do the work John may not feel like answering; if this is the case, he is likely to be cross or wriggly or both. The teacher has the choice of either compelling him to answer, letting him go without answering, or rearranging the situation so that he wants to answer. The last course that is preferable because it involves less loss of face for all concerned. There is a variety of follow-up techniques designed to deal with this situation; among the most appropriate are those which involve the child in activity rather than just being a spectator. Failure to answer would be rarer if children were in the habit of pinpointing their difficulties; if like an adult they could say, "I'm sorry, I didn't quite hear you" or "What does *roll* mean?" or "Were you asking me?" or "Do I have to answer that?" It is a rare child who can formulate such questions. Teachers almost always have to search for the causes of difficulties.

3. Children's Errors

When children do answer, they appear to make three main types of errors. The first and least common type reflects a deeply held belief on the part of the child, and errors of this kind are difficult to manage. For example, before they learn to count reliably, small children often think that the number of objects in a collection depends on how they are arranged: Piaget's nonconservation. If children are shown two lines of counters, they say "the longer one has more in" (even if it hasn't) because the spaces between the counters are much larger. In some situations, children even say that a line, whose length they have seen being altered by being spread out or pushed together, has more objects in it when it is spread out and fewer when it is squashed together. The inconsistency seems not to bother them; and their invariable choice of the longer line for themselves (if the objects are desirable edibles, such as "Smarties") shows how real the belief is!

This is obviously a complex situation and, consequently, sophisticated training is needed to teach children to conserve although almost all children learn to conserve by themselves, given time. The idea that size—the length of a line, the height of the liquid in a glass—is a certain indicator of quantity is one which is hard to give up, precisely because it is a fairly good clue under normal circumstances. Children are liable to make a lot of mistakes of this kind, not so much because they are unreasoning as because they have not yet had enough time and experience to work out which strategies produce the best results. In the case of lines of counters, learning to count and learning that counting is a reliable strategy for finding out "how many" are among the achievements that hasten conservation; but there are other necessary skills, and children will not respond well to teaching until they have these in their repetoires. Research has shown that trying to teach conservation all in one go usually fails (3), while the more limited attempt to teach single conservation subskills which are near to what the child can do already is often much more successful.

Fortunately such complicated *misconception errors* are not the commonest type of mistake that children make. More often children are not committed to their answers; they did the easiest thing to do at the moment. This second sort of error, the *get-out* error, often involves selecting the most obvious characteristic of a situation despite its irrelevance to the question asked. For example: *Teacher*. "Why doesn't this (cube) brick roll?" *Susie*. "Because it's red" (or she imitates something said or done by a neighboring child or even the teacher). Susie has tried not so much to work out the answer to the question as to get out of the testing situation. Refusing to answer may be another attempt to escape being questioned. An error, however, is more likely to provide the teacher with clues about what to do next. "Because it's red," in the example above, suggests the child be shown the irrelevance of colour. Answers such as "Because it's too heavy," "I'm going to build a tower," "Because the Queen doesn't want it to," or "I don't know" each need rather different handling. Get-out errors are easier to cope with than misconception errors because the child may be quite amenable to changing an answer provided the need to change is understood without too much loss of dignity. If Susie is stubborn, she may refuse to admit that her answer was inadequate and may persevere with the same mistake.

The third type of error is the most important for the teacher. Sometimes children give the wrong answer, not because of some profound misconception or because they say the first thing that comes into their heads to get out of a trying situation, but because they try to construct an answer to the question from the things they already know and, thus, get the combination wrong. An example in the "why won't the cube roll?" context might be the child who says "because that isn't up there," with a gesture indicating that if the cube were on a slope, it would move. This fact is true, but the child hasn't distinguished between rolling and sliding and is, therefore, not answering the question correctly. To help the child to a complete understanding of the relevant concepts it would be necessary to compare rolling and sliding objects and to investigate the effects of horizontal and tilting surfaces. This type of error is therefore probably the most fruitful for learning.

4. Follow-up Techniques

Follow-up techniques are all based on the assumption that although an inappropriate response must occur for a child's difficulty to be diagnosed or for the child to reach the point at which new learning is needed, there is no advantage in allowing errors to be repeated. When an error has been made, it is necessary to analyse the situation and work out which of the essential underlying concepts in the particular problem has caused the failure. The appropriate follow-up is then the one which focusses on getting around the difficulty and advancing the child towards the next stage.

Follow-up techniques for use with impulsive, unreflective children centre on trying to make them focus on the precise task they should be working on, by verbal emphasis and repetition and physical restraint, among other methods. Children who lack confidence in themselves and are at a loss when faced with a major demand need other help. Offering them partial (never total) completion of the task or dissecting the task into sequentially or logically ordered segments can help. Other useful follow-ups involve the careful use of comparisons and contrasts and the relation of novel objects to familiar ones. Blank's work on follow-ups (*1*), called *simplifications*, is particularly valuable.

5. Levels

As discussed, matching the child's level includes first diagnosing his present status, then correcting his mistakes by the use of appropriate follow-ups. It also involves an earlier stage, namely deciding the aims of the teaching intervention. Once the child's present level has been diagnosed, it would seem obvious that teaching should be directed towards helping him reach a higher level. There are some problems, however, which make it a little less simple.

An obvious one is what *is* the next level? It is easy to describe total failure and total success, but in almost every area there is a period between the two when the child can do one part of the task but not another or he can do the task successfully sometimes but not always. Thus, there are several levels of performance between failure and success, and while one can perhaps accurately pinpoint a child's present level, it is not always clear what the next level is. Many researchers have tried to spell out sequences of levels, but the resultant sequences have invariably been the outcome of averaging the behaviours of many children. As a result, the proposed sequence fails to fit any one child's development perfectly since there are always small differences between individuals. Some of these may not matter, but sometimes they are important. It is best—in fact it is the only sensible thing to do—to take sequences and developmental charts as guides, not as reliable information about an individual. Most children crawl before they walk, but some walk quite normally without ever having crawled at all. Most children talk first in one word sentences, then two words, and so on; but there are children whose first utterances are said to be of five or six words. In particular, it is unsafe to be dogmatic about ages; a child who walks at ten months will not necessarily be more athletic than one who first walks at fifteen months.

Sometimes it is possible to pick out sequences which every child's development follows. Often these are a fraction of the skills the task requires. Children cannot copy squares before they can copy vertical and horizontal lines, and they probably cannot do the latter before they can hold their pencils or crayons in their fingers rather than in their fists. There are other universal sequences which are less interesting: the order of standing, running, or bicycling. Driving a car is probably the same for everyone, but the stages are too far apart to be useful in describing development.

Perhaps the safest way to solve the problem of discovering what the next level might be is not to be more definite about sequences but to be less so, to have developmental sequences in the back of one's mind, not anxiously at the front. If, under the most favourable circumstances, a child can build a tower four bricks high, then there are two ways in which that child can develop: 1) to being able to build a tower five bricks high under these same most favourable circumstances and 2) to being able to build towers four bricks high under any, even unfavourable, circumstances. Both of these are advances, both will lead to better things. Whichever the child does first is not easily predicted and probably not very important. Anything teachers can do to help the child with the placement and alignment of bricks will help toward both advances. But the more teachers know about the sequences in which skills develop, the more appropriate their help is likely to be.

The writers have collected some developmental sequences of behaviour which they think might be useful to teachers to have in the backs of their minds. The sequences are intended to cover the age range of three to five years and refer to several different areas. It is important that the sequences not be taken as recommended specifics to be taught to children or as sequences of steps which all children must take in the order given. Sometimes there is a clear and obvious reason why a child does A before B; sometimes teaching a child C is necessary to help the child achieve D. However, the items in the sequences have been chosen primarily because they are easily observed and provide good *general* indications of where the child's strengths and weaknesses lie. An example of one such set of developmental sequences appears in the Appendix.

In the dialogue situation, it is also valuable to the teacher to have some idea of the level of cognitive demand which her questioning is making upon the child. Thus, "What is it?" is usually a request for *simple labeling*, while "How did you know it would fall?" demands the giving of a verbal *rationale*. The writers supplied teachers with lists of demands (*2*), in rough order of difficulty, so as to help them adjust to the child's level and to vary the range and types of demands they make [see Blank's Table 2 *(1)* for such a list].

An important problem in trying to get Susie to the next level, given that both her present level and the next level are known, is whether (and when) advancement is really best. The justification for staying at the child's current level is that skills need practising, particularly in their earlier stages. It may be useful to think of a skill, such as reading, as being composed of a number of simpler skills (recognising letters, attaching them to sounds, scanning from left to right, etc.)—each being made up of even simpler processes. It is necessary to have these constituent skills fairly well learned before they can be combined. Practice on the simple skills readies them to be put together; practice on the combined skills perfects the coordination. Practice while learning a skill is rewarding and pleasant; think of the pleasure which a child of eighteen months or so gets from walking—a skilled activity which later becomes so overlearned it often gives no particular pleasure, except when one has been prevented from exercising it. Children will enjoy making a small, new discovery, a small step forward; but they will also be pleased to show off what they have just learned to do.

There are two other considerations which limit the desirability of making new demands of children. The first relates to the pacing of a teaching session. In the earlier parts, teachers should not ask too much of children all at once; at the end of a session, teachers would be wise to make smaller demands again because children are likely to be tiring and because the children should go away with a feeling of success. Nor, of course, should there be a large block of difficult demands; rather, difficult tasks should be interspersed with easier ones. The other consideration is the social ease of the teacher's relationship with the child. If John is shy or nervous or cross about being taken away from his play, he will have less attention to spare for the teacher's demands. In this situation, the teacher must work first at encouraging him to participate and enjoy the conversation: warmth, interesting material, lots of activity, not too high a level—all these will help get John so involved that he will respond to demands that stretch him just a little and lead him to new learning. One has always to remember that the teacher is providing the child with a model of the way in which teachers (and perhaps adults generally) behave. It is unlikely that a child, particularly at this age, will learn anything good from an adult with whom there has been a bad relationship.

It may seem that the task of matching the child's level is impossible and requires immense skills of diagnosis and management, as well as a basic trust and affection between child and teacher. The difficulties are enormous; fortunately, however, although total success is hard to achieve, the rewards of even partial success are clear. As an example, the writers provide some excerpts from transcripts of tapes of one of our teachers as she worked individually with three children. She matches her teaching as best she can to the children's level, increasing the proportions of successes they achieve; she, then, is rewarded by increases in pupil cooperation, interest, and learning.

6. The Teacher Matching Levels

These examples come from the same teacher working on the same task individually with three children. For the purposes of research design, all the teachers in the study were asked to teach a standard session with at least one child. The lesson plan and a specification of essential materials were provided.

The lesson (washing the doll) centered on a problem-solving situation which particularly interests the writers—that of having children pick out a suitable object for a task, from a range of less suitable ones, and having them justify their choices. The first main problem was the selection of a container of sufficient size and water-holding capacity, and the second problem was the selection of something with which to wash the doll. Teachers provided a range of objects including an egg cup, a small bowl, a sieve, and a large bowl, and a range of washing utensils including a brick, a sponge, a piece of bread, and a piece of tissue.

The lesson was arranged so as to give each child plenty of attractive activities to engage in, but its focus was to persuade the child first to reason and then to spell out the reasoning. This assignment is particularly difficult for small children, but it is also of the greatest importance in helping them learn to think and act effectively.

Elaine

This little girl was performing very poorly in school; she almost never spoke, never approached an adult, rarely took up an activity such as painting spontaneously, and spent a lot of her time either gazing into space or wandering aimlessly about. She gave the impression of being as absent from the situation as she possibly could be, allowing for painful self-consciousness.

She had taken part in two sessions which I watched and recorded before this washing-the-doll one, and all the school staff were working on building up good relationships with her. Since her most frequent play seemed to be with the dolls or in the wendy house, we hoped that this session would be relatively congenial to her.

Elaine was, nevertheless, very shy as the session started. Here is how the first few minutes went:

T You sit here and I'll sit here.
1. What shall we do first to wash the baby?
2. What shall we wash her in, Elaine?
3. What shall we wash her in?
4. Which one do you think? (Indicates range of containers.)
C (Points at sieve)
T 5. That one? Can we wash her in that one?
6. What will happen if we put water in there?
7. Shall we try and see?
C (Nods)
T Let's get some water in that one. (Fills jug, places sieve over bowl.)
8. Right, I'll hold the sieve and you tip the water into it.
(T and C do this)
9. Oh dear, what's this?
10. What happened to the water, Elaine?
C Fell down.
T Yes, it went through didn't it? (very delighted voice) So we can't use that.
11. Shall we try something else?
12. What else could we wash her in?
C (Points)

Let us look at the first set of questions, T1 - 4. The teacher begins with a question (T1), "What shall we do first to wash the baby?" which would require a sentence to answer unambiguously.

This task is too difficult, much more than Elaine can cope with, so that the teacher has to find another way of eliciting the knowledge which she knows this child has. Elaine would probably have been able to wash the doll, but she can't form sentences which describe the process in sequence. The teacher realises at once that she has started at too high a level and she reduces her demand by implicitly answering the question about the process and asks (T2) "What shall we wash her in?" This question could be answered with one word, but the shy child doesn't respond even when the question is repeated (T3). The teacher simplifies further by indicating the range of possible utensils and making it possible for the child to answer just by pointing (T4). Elaine points, however, at the object which is most conspicuous, the orange sieve on the top of the pile. The teacher now has to lead the child to discover why the sieve is unsuitable.

Again the teacher starts too high, at a level which demands that the child produce a sentence, and then the teacher gradually simplifies. Rightly, she suggests trying out the effect of water in the sieve. When the child has actively participated in the process, holding the sieve and watching the water go through, she is able to answer the teacher more or less correctly with the two-word phrase "fell down"—which the teacher receives with enthusiasm. Elaine, too, is noticeably more interested in the proceedings. She is much quicker to choose a second object, a cup in which the doll could just stand but not sit. This choice leads to the following conversation:

T 1. When you have a bath, do you sit down in it?
C (Nods)
T 2. Can the dolly sit down in there?
C (Nods)
T 3. You sit her down. You try it.
C (Tries to balance doll on one hip on cup.)
T 4. I don't think she can sit down, Elaine, look.
5. What's the matter with that one, Elaine?
6. It's too...
C Tiny.
T Too tiny, that's right, it's too small.

The child doesn't grasp the analogy with her own "fit" in the bath but she carries out all the teacher's instructions correctly and produces a correct (size) word to complete the teacher's incomplete sentence (T6). This is the sort of functioning Elaine maintains for most of the session; she follows instructions correctly, she describes objects or happenings with one or two words, but she doesn't produce sentences or cope well with predictions or explanations. The teacher gradually matches herself to this level and is rewarded by Elaine's increased enthusiasm. The child appears to enjoy herself and spends a total of twenty-five minutes preparing, bathing, and drying the doll.

Amelia

Amelia, is different from Elaine in character. She is the intelligent daughter of a rather cold and rejecting mother. Like Elaine, Amelia is doing badly in school; but Amelia's difficulty is due to her inability to cope with the social and emotional situations. She is distractible, noisy, aggressive, hostile, and clinging by turns—almost totally unable, despite her intelligence, to share or cooperate with other children. As one would expect, the session with Amelia was different:

T What are you going to wash her in?
C Er... that. (Points at bowl.)
T Why that one?
C Because I like that one, er, I like it.
T What's wrong with this one? (Offers cup.)
Why can't we wash her in there?
C You can't. (Inaudible mutter.)
T You can't?
C Put it on her head.
T (Laughs) I don't think it would even fit on her head, no. It's too...
C Small.
T It's too small; that's not good, is it Amelia?
What's wrong with that one, then? (Offers sieve.)
C That's, that would go over her head.
T No, why can't we wash the dolly in that?
C Because I like that one. (Points at bowl.)
T I know, but why can't we wash the dolly in there? You tell me.
C 'Cos... (inaudible).
T What are these in the bottom?
C Holes.
T What will happen to the water?
C Er... there.
T Pardon.
C In there.
T What will happen if we tip water in there?
C Come through.
T It'll come through, yes, it'll go through the holes, so that's no good is it?

Amelia's main problem here is that she has instantaneously chosen the best "bath" for the doll and wants to get on with the job. The teacher's task is mostly to keep her to the point and to persuade her to make her reasoning explicit. Later, Amelia shows considerable powers of reasoning in an interchange about the choice of what to wash the doll with. The bath has been run in the bowl she first chose and the doll's clothes put safely to one side:

T Now, what are you going to wash her with? Here you are; you can wash her with that. (Offers brick which C takes.)
Is that any good to wash her with?
Are you going to wash her with *that*? (C is scrubbing the doll with the brick.)
What is it, Amelia?
C A brick.

T Would you like me to wash *you* with a brick?

C No, no. (Laughs)

T Why not?

C Because I'm not plastic.

Amelia doesn't explicitly say that she could use anything at all to wash the doll because, being plastic and inanimate, it can't feel, but she is quite certain about this. Later, despite the teacher's protests, Amelia puts the doll face down in the water and scrubs it hard with the brick. Matching her level in this session is a matter of focussing her attention and encouraging her to spell out her reasoning. One source of difficulty is that the session is pitched at rather a low level for this bright child.

Samuel

The third child also is one who is not doing well in the nursery class. Somewhere between Elaine and Amelia, Samuel is a little aggressive and not very communicative, quite big and strong, an expert cyclist, but not very fond, it appeared, of activities indoors. He had blossomed in earlier one-to-one sessions and had started to spend more time with adults since the teaching experiment started.

T Right, what are we going to bathe her in, Samuel? We've got all these things. I should leave her clothes on until we've found out what to wash her in. Have a look. Shall we bathe her in this one? (Offers small bowl.)

C (Shakes head.)

T Why not?

C Because we're going to bathe her in there. (Points at cloakroom)

T No, we're going to bathe her around here in one of these, but which one?

C (Points to the small bowl.)

T That one?

C That's got a little . . . ("water in" indistinctly).

T A little one?

C A little water.

T A little water in, yes. Is that big enough to bathe the doll in?

C (Nods)

T Can she sit down in it?

C No.

T Is that big enough, then?

C Yes.

T Don't you sit down in your bath, Samuel?

C No.

T Don't you?

C No.

T I don't think that is big enough for the doll; it's not really big enough for her to sit down in, not really. Shall we take that one away? Is that one big enough? (Offers egg cup.)

C (Grins and shakes head vehemently.)

T (Laughs) What is it then, its too . . .
C Small.
T Too little, yes. (Both giggle.) Look, she can only just get her foot in there.

Samuel is performing so far much better really than either Elaine or Amelia. He observes accurately, answers correctly, and uses sophisticated sentences—"because we're going to bathe her in there" is outstanding. One problem is his rather poor articulation. The difficulty over his accepting the bowl as good enough to bathe the doll in is something the teacher clearly didn't expect, and she is a little at a loss to cope with what begins to be a little embarrassing. Possibly Samuel doesn't sit down in his bath at home. Possibly, even, there isn't a bath. Probably this is a situation where retreat is the best course. The teacher does retreat; she offers her own opinion and makes a big joke out of the doll and the egg cup. Next she offers the colander, which the doll could sit in, and they run into a bit of trouble:

T What about that, Samuel? (Offers colander.)
She can sit down in there, can't she? (Demonstrates.)
Shall we bathe her in that one?
C (Nods)
T What are all these, Samuel? (Points to holes.)
C Spots.
T They're not spots.
C What are they?
T What would happen if we put water in there?
C (Unintelligible and quiet.)
T Look, we'll try it. Put it over the bowl; here's some water. I'll hold the colander—that's a colander—you hold the water. I'll hold the colander. Tip it into the colander and see what happens.
Put it all in. (Child pours.)
What happened to it?
C Spilt some water.
T Spilt in? Where did it go? You put it in the colander.
C (Points at water in bowl.)
T How did it get in the bowl?
C It fell through. (Poor articulation.)
T How did it go from the colander into the bowl? It went . . . through the . . .
C Holes.
T The holes, yes, so is that any good?
C Yes, if it had holes in. (Again, poor articulation.)
T Here's the towel. (C wipes hands.)
Is that any good, then, Samuel?
Can we bathe the doll in there? We can't get the water to stay in, can we?
C I want to take her clothes off her.

T You've got to have something that will hold water or you can't bathe her, can you? I don't think that's any good because the water keeps going out of it.

C What's that?

T What about that? Can we bathe her in there? (Offers sieve.)

C Yes.

T What are all these? (Points out little holes.)
No, they're not spots, they're . . .

C (Inaudible)

T They're holes, aren't they, Samuel? Holes. So what will happen if you put water in there?

C It would go away. (Poor articulation.)

T If you put water in there, what would happen? The water would go . . .

C Splash!

T Will it stay in there?

C Hey, what's that? (He has noticed a piece of bread.)

T Wait and see. Will the water stay in there?
Shall we try it?
I'll hold the sieve—that's called a sieve—and you tip the water in, into the sieve.

C (Pours)

T Did it stay in the sieve? Is there any water in? No?
There's no water in there, is there Samuel? Why not?

C It came out.

T Where did it go?

C Through the holes.

T (Slight laugh) Through the holes, so that's not good is it?
What about this one? Is this any good to bathe the dolly in? (Yogurt pot.)
Do you think she'd be comfortable in there?

C Yes, she put her feet in, yes.

T She'd just get her feet in, yes.
What about this one Samuel? (Offers washing-up bowl.)

C It fits in there!

T It fits in there. Shall we fill this up with water? While I do that you can take the dolly's clothes off.

This sequence lasted about three and one-half minutes. It took so long partly because Samuel was not clear about holes and what happens when water is poured into them, but a fair part of the confusion was also caused by his poor articulation. He doesn't get credit for some of his correct—or largely correct—answers. His other problem is distractibility; he is not good at narrowing his attention to the precise point the teacher wants to focus on. The teacher uses a variety of techniques to deal with this; she repeats questions, she points out crucial features (such as holes in the sieve), she offers model answers, and above all she sets up little experiments for the child—"Shall we try it?" "Tip it in and see what happens." What she does not do here, perhaps for good reasons, is remove some of the sources of distraction; she might, perhaps, have removed out of the sight of the child, the containers which they weren't talking about and she might also have allowed him to undress the doll. This might have kept Samuel more on track throughout the session; nevertheless, he is functioning fairly well—his only repeated failure is on predictions, and he goes on being talkative and interested throughout the session.

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Appendix

Developmental Sequences
The following sets of items indicate, in the approximate order of their development, the skills children acquire in several different areas. Items of behaviour are chosen both for their importance and because they can easily be observed by the teacher. Several different groups have been working on composing developmental charts for use by teachers, parents, and other observers. The writers consulted several of these groups during the writing of the booklets and are particularly grateful to Dorothy Jefree of the Hester Adrian Research Centre, Manchester University, and to Ruth Jacob of the National Children's Bureau for their help. The three development guides that follow were composed by NCB, and the writers are grateful to be allowed to reproduce them.

The writers wish to emphasise again, without at all depreciating the work of the composers of developmental charts, that one must expect individuals to vary in the order and the speed of their development and that the items on the charts should not be taken as recommended things which children ought to do and teachers ought to teach. A major principle of this teaching programme has been that teaching should be fitted to the individual child; developmental charts, which are inevitably generalised, can therefore only be guides.

National Children's Bureau Development Guide A (ages two to five)
Physical development (growth and control of body movements)

37. Can kick a ball.
38. Can sit on, move, and steer tricycle with feet on the ground.
39. Can jump over small object on foot.
40. Can climb easy nursery or playground apparatus.
41. Can ride tricycle with feet on pedals.
42. Can jump on spot with two feet together.
43. Can balance briefly on one foot.
44. Can jump from bottom step with two feet together.
45. Can throw ball overhand.
46. Can walk on tiptoe.
47. Can sit on floor crosslegged.
48. Can walk upstairs like an adult, one foot to each step.
49. Can hop on one foot.
50. Can run on tiptoe.
51. Can walk downstairs like an adult, one foot to each step.
52. Can climb ladders, trees, climbing frames.

53. Can bend to touch toes with straight knees.
54. Can sit on chair with one leg crossed over another, if shown by an adult and asked to do the same.
55. Can walk ten or more steps along a chalked line.
56. Can walk heel to toe, if shown by adult and asked to do the same.
57. Can skip around room with alternate feet, if shown by adult and asked to do the same.

NCB Development Guide B

Adaptive development (coordination of sight with fine movements)

24. Can open door.
25. Can unwrap small paper-wrapped sweet (e.g., spangle).
26. Tries to unscrew lids.
27. Has begun to paint.
28. Holds pencil or crayon in fingers, not fist.
29. Can scribble on paper.
30. Can build bridge with three bricks after watching adult.
31. Can copy vertical line.
32. Can turn the pages of a book, one by one.
33. Can thread large wooden beads onto shoelace.
34. Can pour water from a jug into a cup without spilling.
35. Can build a tower with ten or more bricks.
36. Can copy horizontal line.
37. Can copy circle.
38. Can match three plain shapes.
39. Can match three decorated shapes.
40. Can cut across a two-inch strip of paper with scissors.
41. Can catch ball with both hands.
42. Can copy cross.
43. Can build three steps with bricks after watching adult.
44. Can match three capital letters.
45. Paints picture with organisation of lines or patches of colour.
46. Draws man with head and legs.
47. Can copy square.
48. Can use bat to hit ball.
49. Can thread large sewing needle.
50. Can copy a few letters.
51. Paints pictures easily recognisable as people, houses, etc.
52. Can copy triangle.
53. Matches four words:

end	adn	and	an	aned	and
poat	pot	pat	po	top	pot
mey	my	may	way	maiy	may
pin	nap	ip	nipe	nip	nip

NBC Development Guide C Communication
(development of speech and understanding of language)

19. Can show or point to four or more well-known people, animals, or toys when asked things like, "Where's Daddy?"
20. Can point to one part of own body when asked "Where's your nose?" etc.
21. Sometimes says "No."
22. Puts together two words or more (e.g., "byebye car").
23. Tries to tell about things he is doing.
24. Tries to sing or say rhymes or songs.
25. Can point correctly to two well-known objects in a picture book, when asked.
26. Talks in short phrases of three words or more.
27. Put cup, book, and spoon on table and say, "Put the spoon *in* the cup" without showing him. Tick if can do without being shown.
28. Same objects: "Now put the *spoon* on the book." Tick if can do without being shown.
29. Can do both when asked to "Put your hands up and then down."
30. Shows that wants to know the names of things (e.g. by asking "What's that?").
31. Sometimes plays with small representational toys in make believe games.
32. Listens attentively to short stories.
33. Can sing or say one or more nursery rhymes or TV jingles.
34. Give car or similar toy and say, "Put the car *under* the table." Tick if can do without being shown.
35. Normally says "I" or "me" instead of own name when talking about self.
36. Says "mine" when asked "Whose shoe is this?"
37. Asks questions beginning "where" or "who."
38. Adds "s" to words when talking about two or more things (e.g., dolls).
39. Carries on a simple conversation.
40. Can give a sensible reply to the question, "What do we sleep in?"
41. Give car—"Put the car *behind* the chair." Tick if can without being shown.
42. Can match colours given a lot of coloured things—"This is a *red* one. Show me another *red* one." Do the same for red, green, yellow, blue: must get all four correct.
43. Two object-size comparisons: "Which is bigger?" Must do correctly three times.
44. Two towers, change position three times: "Which one is higher?"
45. Three objects in a row: "Which one is in the middle?"
46. In a picture book: "Show me a picture of something little."
47. Speech easily understood by strangers.
48. Sometimes tries to count things while playing.
49. Uses "and" to join phrases or sentences into continuous speech.

50. Given lots of coloured objects can find red, yellow, green, and blue.
51. Can describe what is happening in a picture, not just name objects.
52. Can count five bricks correctly with or without pointing.
53. Says "car" when asked, "Which goes faster, a car or a bicycle?"
54. "Now I'm going to say a word and ask you what it is. Tell me, what is a *ball*?" Definition by use or characteristics (e.g., it's to play with, it's round, it bounces).
55. "Now listen to this word. *House*, what is a *house*?" Definition by use or what it's like (e.g., a home, you live in it, it's for families, it's built of bricks).
56. Says "morning" when asked "when you have breakfast, is it the morning or the afternoon?"
57. Can use past tense correctly (e.g., in answer to, "What did you do last night?").
58. Says "ten" when asked "How many fingers have you got?"
59. "Listen. In summer it's hot; in winter it's ______. Can you say the right word?" Any description of the opposite temperature is acceptable.
60. "Now listen to this one: In the daytime it's light; at night it's ______."
61. Always uses correct sentences with good grammar and clear speech.